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1950 BRITANNICA BOOK OF THE YEAR

West Germany Writes a New Constitution

A Record of the March of Events of 1949

1950
BRITANNICA
BOOK OF
THE YEAR

• Prepared Under the Editorial Direction of
Walter Yust, Editor of
Encyclopædia Britannica

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INTRODUCTION

> *"They will appear to be omniscient and will generally know nothing; they will be tiresome, having the reputation of knowledge without the reality."*

PHAEDRUS' *words are old. But "they" of the quotation could be politicians, columnists, military men, financiers, labour leaders, writers of books and plays, radio commentators, teachers, editors, scientists, of the year 1949—or of any year. The "omniscience" of these is a root, generally, of current evil and of evils that follow. Such men are not only tiresome, but they can be dangerous.*

The year 1949 has known bigger atom bombs, engines that move faster than engines were ever expected to and voices that can in an instant circle the globe; there seems to be no end to expansion in technological achievement. But the year has also had "cold war," universal dissension, hunger and want beyond all imagining—and, of course, no peace at all.

The present Book of the Year is the thirteenth in the series. The volumes reflect most areas of human interest and especially the activities of men, good and bad, who were "certain" and had no right to be, whose reputation of knowledge was without the reality. Men of humility have never had much chance against them.

It was said by Nehru, in 1949, that "bad means can never make good ends." It's been said a thousand times. But most of us don't believe it. And so many of us can't recognize a "bad means" when we see one. The blame lies within us. We don't know enough. We don't try to know more. We favour enlightenment, but make little or no attempt to be enlightened. We are too lazy, too many of us, even to hope.

And yet it is comforting to know that hope is always blossoming somewhere. Hope is a reality that gives the world promise of spiritual dignity and that kind of humility which, one day, alone can bring peace to the world.

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X.
ANONYMOUS.

The Year 1949 in Historical Perspective

The contributions on the following pages are an attempt to examine some of the principal cultural and political trends of the world during 1949, and to relate them to prior developments from which they emerged, or with which comparisons might be drawn. This is done by directing the reader to appropriate articles and parts of articles in the *Encyclopædia Britannica*. By examining this background of material the reader of the *Book of the Year 1950* may achieve a fuller understanding and appreciation of present events and their roots in history.

(Footnotes are direct references to articles and parts of articles in the *Encyclopædia Britannica*.)

THE TRENDS OF CULTURE

By Isaiah Berlin

Fellow and Tutor of New College, Oxford University, and University Lecturer in Philosophy

THE year 1949 was not notable for any revolutionary change or crisis in the development of thought and of art, or indeed of any form of human self-expression. But there were marked differences between the forms adopted by it in the principal areas of civilization—western Europe, North America and the soviet orbit. In western Europe the central mood was one of anxiety to avoid anything exaggerated or *outré* and too self-revealing, any suspicion of wishing to dramatize or romanticize either the present or the past, still less the future. As if conscious of the absurd spectacle presented by the extravagant cynicism and disillusionment in Europe after World War I, the generation which succeeded World War II seemed determined not to be carried away by any wave of violent feeling, whether positive or negative. It may be not unprofitable to bring this out by comparing some aspects of the year 1922, since like 1949, it was divided by four years from the end of a great war. In Europe the early '20s were marked by a sharp conflict between the ebbing, but still strong current of liberal idealism which had created the League of Nations, which believed in open diplomacy and still, despite many failures and disappointments, seemed confident that a new and better order was surely, if somewhat slowly, coming into existence, bringing with it more liberty and equality and prosperity for individuals and classes and nations than any previous age. This optimistic faith was in some degree shared both by conservatives and liberals, victors and vanquished, at any rate in western Europe. Arrayed against them were those sceptical and destructive persons who out of amusement and indignation exposed what they regarded as the shams, the muddles and the absurdities of their immediate predecessors—above all, the inflated values of that decaying Victorian establishment which had failed to prevent the brutalities of the great slaughter. They proudly flaunted their disbelief in, and indeed contempt for, tradition as a heroic act of testimony to the truth, however unpalatable—an attitude superior to the passive acceptance of systems in art and thought and life no longer tolerable to any moderately intelligent or honest man.[1] The air was full of violent denunciation of old divinities and bold new experiments intended not to produce objects of lasting value, but to innovate and to shock. This is the best-remembered characteristic of those years; any methods, however bizarre, were applauded, provided they looked as if they could shake the ignorant and complacent out of the exasperating dead level of their unperceptive lives. Often these experiments were mere forms of extravagant exhibitionism or hysteria, launched by individuals with little talent save as impresarios.

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[1] **JUVENAL: *Contents of the Satires;* VOLTAIRE, FRANÇOIS MARIE AROUET DE; SWIFT, JONATHAN (for examples of spirited debunking in earlier times).**

At times they revealed a pathetic frustration on the part of writers or artists whose anguish exceeded their gifts, and whose works to a later and more critical generation seem worthy of sympathy but scarcely of admiration or respect or even interest. At other times they resulted in works of the most authentic and enduring genius; it was a period exceptionally rich in works both good and bad, and artistically and intellectually most exhilarating.[2]

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The generation of 1949, as every available symptom indicated, was the opposite of this. Biographies are among the surest indications of the view of life for which the biographer, whether consciously or not, himself stands; and so far as he is typical of the mood of his generation, he will convey its thoughts and feelings for the most part more truly than its official heralds and prophets. If then we consider those of 1922, they represent either the last phase of the grand, old-fashioned Victorian tradition of competent and solemn monumental masonry, or else the exercise of sharp analytical skill compounded of the new sciences of psychology and sociology with which the authors, with varying proportions of gaiety and savage irony, struck out and demolished, pilloried and caricatured those of their predecessors who symbolized the most ridiculous or the most detested vices or tyrannies of previous generations.[3] The tone in any case was moral: enthusiasm or indignation, passionate defense or bitter exposure; there was a major battle in progress; the old values and the new were sharply distinguishable; the battle of the young against the old had never reached such heights of open and violent conflict. Both sides, even if they were not fully prepared to say what order it was for which they were fighting, were only too ready to specify what they were against; some stated their reasons in elaborate polemical tirades, others preferred direct action by word or painting or musical composition likely to outrage the enemy and in the end sweep him out of existence.[4]

This was a far cry indeed from 1949 with its mood of sober nostalgia and cool appraisal: the great Victorians were amply commemorated in almost every literate country; in England alone two lives of Ruskin, two studies of Byron, massive books on Tennyson, Dickens and the prince consort appeared. Their writers were cautiously determined to say neither too much nor yet too little; the analysis was careful, judicious and morally neutral;[5] the eminent dead were represented as burdened with an excess neither of virtue nor of vice—they were figures neither exceptionally great nor absurdly small, and although not overwhelming, were clearly considered as being far more impressive than either the biographer himself or his reader. The attitude was neither one of admiration for success, nor of that genuine contempt for it which was typical of the literary morality of the '20s; but of a somewhat gloomy feeling of respect, carefully emptied of any committal expression of feeling; the tone was one of objectivity and conveyed a mild sense of wonder, mixed with neither admiration nor disdain at the fact that those large beings once walked the earth. The reader was invited to inspect the more noteworthy characteristics of the persons described as part of a solider, and on the whole, more interesting world, worthy of the attention of the civilized and the fastidious, but not of sharp or eager advocacy. At first this appeared a juster and certainly more mature outlook than that of a quarter of a century before. But if we compare the imaginative literature of the two periods we find that, if this is so the price paid had been high indeed. For 1922 saw the appearance of these works (to take only those in English): among the older poets, new collections of verse by W. B. Yeats, Thomas Hardy, A. E. Housman; and then the true harvest begins: *The Waste Land* by T. S. Eliot, *Ulysses* by James Joyce, *Babbitt* by Sinclair Lewis, *Jacob's Room* by Virginia Woolf, *The Garden Party* by Katherine Mansfield, *Swann's Way* (the first volume of the translation of Marcel Proust's *A la recherche du temps perdu*), by C. K. Scott Moncrieff; all these, particularly *The Waste Land, Ulysses* and *Babbitt* were works whose influence on English was greater than that of any other contemporary writing. In this same year moreover there appeared such minor masterpieces as *Lady into Fox* by David Garnett, the *Puppet Show of Memory* by Maurice Baring, *Books and Characters* by Lytton Strachey, *The Second Empire* by Philip Guedalla, *Aaron's Rod* by D. H. Lawrence, *Mortal Coils* by Aldous Huxley, *Mr. Prohack* by Arnold Bennett, *Kleist* by Gundolf, books by Wells and Galsworthy, Keynes and G. M. Trevelyan, two volumes of caricatures by Max Beerbohm; and a work of philosophical genius which had a greater influence on the development of logic and the theory of knowledge than any other of its time, the *Tractatus Logico-Philosophicus* by Ludwig Wittgenstein. This is all stupendous enough in a year which was not exceptional in its own period; even allowing for the magic of distance it must be conceded that 1949 had somewhat less to show.

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The most important single factor in 1949 was, of course, the continuation of the battle between the creeds—between Marxism and its various enemies—the greatest since the Reformation and its aftermath. This divided the world into hostile camps about which no all-embracing generalizations could profitably be made. In the West imaginative literature, while not precisely in decline, showed no sign of any bold new beginnings. The best English-speaking novelists produced works of great technical perfection in accepted and familiar genres. Elizabeth Bowen, Ivy Compton Burnett, Henry Green, utterly different as they are in almost every respect, published novels which reflected acute moral and spiritual preoccupation with the fate of individuals hemmed in by and insulated against an aggressively impinging environment. The feeling was romantic, and to some degree nostalgic, the canvas not large, the problems were (unlike postwar writing in France) neither intellectual nor social nor metaphysical, but personal, not a direct expression of—although not untouched by—the psychological doctrines prevalent at the moment. George Orwell's *Nineteen Eighty-Four*, which caused a considerable stir, was a tract of the times, dealing with the implications of the unchecked development of the ruthless control of the lives of individuals by political tyrannies which brutally crush and destroy human beings and forms of life in the name of official ideologies scarcely believed in by the leaders themselves. The mood of general distrust of political nostrums and formulas as such, a sense of horror when faced by the inhuman consequences of doctrines and ideas unmodified by understanding or sympathy for the actual predicament of specific individuals or groups in specific situations, filled the writings of disillusioned writers who had broken with communism (like the very gifted novelists Koestler and Silone), who denounced their past with varying degrees of anger or bitter and ironical satire. Even T. S. Eliot seemed caught by this ambiguity and lack of positive character; of all living writers in English he had had perhaps the strongest positive influence on other writers; he had an "ideology" and a "message"; his poetical dramas had conveyed his views as clearly as his left-wing opponents succeeded in expressing their own. But the *Cocktail Party* performed at the Edinburgh festival was less eloquent, more obscure and more elusive than even *Family Reunion.* The *Zeitgeist* seemed to have cast its spell even on his low-toned, carefully modulated voice. There was, on the other hand, a great deal of very distinguished work done in the field of criticism: Ernst Robert Curtius of Bonn published a masterpiece on the rise of the European tradition; and interesting and penetrating critical studies were published by Herbert Read, Edward Sackville-West, Lord David Cecil, Basil Willey, Cleanth Brooks, Van Wyck Brooks and Leavis; the bicentenary of Goethe's birth led to commemorations in many parts of the world and notable discussions of his genius and influence. Critical powers exceeded those of the creative imagination almost too obviously.

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[2] **PAINTING:** *Dadaism;* **KRAUS, KARL; STEIN, GERTRUDE; JAZZ; UNITED STATES OF AMERICA:** *Prohibition* (for exaggerated but influential expressions in art, conduct and personalities following World War I).

[3] **STRACHEY, LYTTON; BIOGRAPHY:** *Lytton Strachey's Method* (for a prototype of the post-World War I biographer).

[4] **HUMANISM; ETHICS, HISTORY OF:** *Humanism;* **RENAISSANCE:** *Humanism and the German Reformation* (for an earlier period of ferment brought about by a reshifting of values).

[5] **SOCIAL ANTHROPOLOGY:** *Psychological Interpretation of Culture* (for parallel attitudes of detachment toward mankind as a whole).

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The general mood in western Europe was sober, sane, touched with scepticism, afraid above all of those excesses of cynicism and disillusionment which to a later generation seemed sentimental and infantile. There was neither great optimism nor great pessimism; above all, writers were anxious to convey the impression that they were adult, balanced, fully capable of surveying the contemporary scene, however dull or dangerous or hopeless, with the unprejudiced and unexcited eyes of long experience, not likely to be betrayed into giving themselves away by exaggerated passion for or against anything. The genuine romanticism of the wartime resistance against fascism, both Communist and non-Communist, was dying fast. The great three-cornered ideological war—between Catholicism, communism, existentialism—which during the years immediately following the war dominated both the life and art of France and threatened to convert the latter into applied social theory, metaphysics, theology, everything but itself, diminished in importance. Mauriac and Claudel, Aragon and Eduard, Sartre and Mlle. de Beauvoir, continued to act as party leaders and banner bearers of the three movements; but some of their most gifted followers failed to retain their ideological purity. Some formally seceded; others returned to the practice of an art not primarily concerned with demonstrating the doctrine or preaching a particular way of life. And although France since the Renaissance had been—and still remains—the classical battleground of philosophy and religion, of highly self-conscious alignments of the least politically minded writers into this or that ideological camp, yet even there the claims of "pure" literature were asserting themselves once more.[6] Aragon wrote a party novel, *Les Communistes;* Sartre continued to write existentialist plays and published a new volume of his great *roman-fleuve.* Camus published a remarkable historical play, *Les Justes,* about a political assassination in Russia in 1905. Neither Sartre nor Camus after the fashion of their school sought directly to suggest solutions to social or individual dilemmas, in the manner of the realists, nor yet to discredit their importance in the dryly cynical and deflationary manner of the Maupassant-Somerset Maugham tradition of amoral storytellers, nor yet to create lyrical or religious art like Mauriac or Cocteau. These once revolutionary writers now no longer in their first youth wrote and were widely read, and visited foreign countries and were duly acclaimed, but seemed more remote from the new mood, than the surviving writers of the 19th century: André Gide, and Maurice Maeterlinck (who died in the course of the year). The climate of opinion was temperate, the attitude to life serious, meticulous, unsentimental, a little bitter and, in a restrained way, nostalgic. Julian Green was greatly looked up to; in France there was a minor revival of "daring" literature which dealt with sexual aberrations in a deliberately flat and unromantic manner which betrayed the still very powerful influence of André Gide and the modern U.S. "tough" school of novelists so greatly admired by him—Hemingway, Faulkner, Cain and O'Hara, the greatly praised Steinbeck. The principal characteristics of writing, both imaginative and critical, were (apart from the waning Communist vogue) freedom from dogma or crusading zeal, a kind of cautious humanism, respectful both of the truths and methodology of science and of the inner life of the individual, sensitive, tolerant, careful, observant, open-minded, civilized, almost a return to the civilized melancholy of Montaigne, but on the whole with little hope and little temperament.

This seemed true even of postwar German writing, which sought relief from the humiliating present behind the metaphysical smoke screen of the transcendental theology of such writers as Jaspers and Heidegger;[7] the view of life was vaguely tragic but too remote to bring home the sense of the crimes and horrors of the immediate past, relieving the burden of particular guilt by a misty disquisition on its nature in general, in which the painful facts grew dim and invisible, written in quasi-theological prose for which the dark tradition of German and Danish mysticism and idealism was heavily drawn upon.

It seemed obvious that the postwar period in western Europe had gone on far longer, because of the failure to achieve adequate social and economic reconstruction, than the similar period after 1918; and that, as happened then also, the romantic afflatus of the heroic years of war had become exhausted without producing an equally spirited reaction. The appetite for life which seems to require a certain degree of economic security and opportunity within the middle class (which continued to produce the majority of the writers and artists) had clearly not been achieved. The year 1949 was a time not so much of transition as of absence of forward motion, becalmed, with little wind to swell the sails.

If this applied to the field of critical and creative writing in which no works of genius were born, and even Malraux had ceased to be a revolutionary writer, great signs of originality and life could perhaps be perceived—combined with the prevailing unsentimental mood—in other spheres: Italian films, for example, among the most interesting artistic achievements of the day, displayed a capacity for natural vision, artistic sensibility and purity of purpose and freedom from rhetoric, or contrived pathos or solemnity and so resulted in works of art more moving, poetical and true than anything achieved in any other country since the war. The reason for this may lie in the fact that Italy, with its creative energies so long constricted and perverted by a sterile despotism, possessed unexpended resources of feeling and constructive capacity not to be found in countries in which the writers and artists went through their greatest moral crisis in the late '20s or '30s.

In music there was much charming and sensitive writing, particularly in France, Italy and Switzerland; the English composer Vaughan Williams produced a notable symphony, surprisingly modern in structure and sentiment. Interesting and highly skilful and agreeable but very nonrevolutionary works were written by Ernest Bloch and Hindemith in the United States, by Benjamin Britten in England and Dallapiccola in Italy. There was a revival of music in Germany; much was expected of a composer of partly Russian origin domiciled in Berlin, Boris Blacher. No new voice was heard, no new tendency asserted itself. The atonalists continued to experiment in their chosen medium, and much was written to expound the theories of its founder Schönberg, but since the death of Webern atonal music seemed to exercise more appeal to the eye than to the ear.[8] The technical skill of orchestras (though not of players of chamber music or singers) and the art of recording and mechanical reproduction appeared to improve in inverse ratio to originality and beauty of composition.

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[6] **ROUSSEAU, JEAN JACQUES:** ***His Character and Influence;*** **HUGO, VICTOR:** ***Politics and Exile;*** **DAUMIER, HONORÉ (for French artists who were characteristically "engaged" in the ideological warfare of their times).**

[7] **TRANSCENDENTALISM; PHENOMENOLOGY:** ***Transcendental Phenomenology.***

As for the visual arts, they were, as had often and monotonously been pointed out, dominated by the masters who were already in the full tide of their creative activity after World War I—the painters Matisse, Picasso, Braque and Léger continued to overshadow their younger contemporaries; no national school could vie with that of Paris in this respect, but there was little new to record.[9] The Neo-Gobelin school of French tapestry and the occasional additions to their vivid brand of public art by the Mexican school did little to alter this general impression. Public appreciation of painting and sculpture rose as creative output diminished: the great exhibitions of painting in Paris and London and Switzerland held in 1949 were models of their kind, and excited much discriminating enthusiasm. Excellent critical studies were published on both sides of the ocean; commentators and interpreters appeared more gifted than their modern originals. The study of the history of art in English-speaking countries rose to heights of elegance and scholarship which made it the rival of the most distinguished masters of the subject in Italy and Germany, and Malraux's *Psychologie d'art* continued the noble French tradition of writing about art by men of letters, the tradition of Diderot, Taine and Valéry. The refinement, imagination and uncompromising fastidiousness displayed by the Third Programme of the British Broadcasting corporation, and its musical and literary programs raised this experiment far above any consistent public effort of its kind attempted before; the state itself seemed to be adopting standards hitherto confined to cultivated amateurs.

In philosophy there was genuine progress. No common language could bridge the gulf between the great empirical school which dominated English-speaking and Scandinavian countries and the metaphysical and religious philosophies of western Europe. The great revolution inaugurated by Bertrand Russell in the beginning of the century, perhaps the greatest since the 17th century, appeared in the '20s and '30s to be in danger of ossification in the great dogmatic schools of Vienna and Cambridge, and their many offshoots in Scandinavia and the United States and elsewhere.[10] There was some justice in the frequently made charges that the division of what could be said into empirical statements of fact and logical formulations of the rules of language mechanically eliminated, instead of solving, many problems which tormented generations of enquirers, and created an over-simplified form of utterance in which the finer differences became obliterated, and the problems posed by metaphysics were crudely dismissed instead of being resolved by the new technique. The progress of the subject in 1949, although not rich in major philosophical works, made possible far greater flexibility of expression, and so allowed the rich ambiguity of language to play its proper part in the conveying of those differences and similarities for which metaphysicians devised strange terminology, which in the end obscured and almost destroyed the purpose of the precise and therefore technical use of words. The most notable single work of this school of thought in 1949 was the *Concept of Mind* by Gilbert Ryle of Oxford university, a bold and imaginative volume written with uncommon force and freshness. The philosophers engaged in this type of work seemed scarcely themselves aware of the magnitude of the transformation which they had been so rapidly effecting, or of the mass of philosophical writing during the last 150 years which they were rendering obsolete; seldom can so much darkness have been illuminated so rapidly and so successfully. The effects of this spread widely beyond the realm of technical philosophy, and standards of clarity and responsibility for factual statements insensibly rose in the fields of history, the social sciences and criticism generally. While empirical theories of thought and language on the one hand and the techniques of symbolic logic on the other progressed and developed, the older philosophical theories lost ground, at least in the major seats of Anglo-U.S. learning; or at any rate recognized enough of their opponents' claims to be fruitfully transformed themselves.

Meanwhile, the more traditional types of philosophy, relying upon intuitive methods rather than upon those of the natural sciences and common sense, continued to flower in France and Germany and Italy, as well as the countries of Latin America; there existentialism fought with more orthodox Catholic rationalism, in particular Neo-Thomism, or uncompromising Protestant faith; while the proponents of Marxist dialectical materialism in the orbit of the Soviet Union denounced all philosophies in the western world as equally bourgeois, decadent and false. Apart from the logicians and empirical philosophers and their allies among the psychologists and sociologists, whose subjects also were making swift if not always solid progress, the contending philosophers confined themselves to exposition rather than formal argument, each side remaining convinced of a sense of superiority; nor were there any intermetaphysical techniques of communication between warring camps in terms of which either side could be made to recognize its own fallibility. This was particularly true in the field of ethics.

The general impression of the western European scene was, therefore, one neither of an exceptional flowering of creative powers, nor of chaos or decadence; but of the pursuit of older directions with exceptional sensitiveness, competence, seriousness and moderation. As a result, its best achievements were not dull or mediocre, or extravagant, or counterfeit; but on the other hand they opened no new windows, and created no novel fields for the application of new technical methods. Individual works possessed a degree of originality and truth as great as any before them; they sprang from sober reflection and great critical sensibility, not exuberant imagination or an irrepressible desire to know or to enjoy, to do or to be, something in particular.

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The situation outside western Europe in the countries dominated by communism and in the U.S. was somewhat different. In the United States there seemed less evidence of sensibility, but there was far more hope, and above all a far stronger sense of the crucial importance of the issues involved and of the need to speak out and declare oneself in a relevant fashion. No doubt, the quality of works like Mailer's *The Naked and the Dead* or Williams' *A Streetcar Named Desire*, still widely discussed in 1949, was inferior in kind and not merely in degree from the masterpieces of Ivy Compton Burnett, or M. Sartre or Elizabeth Bowen, or Edith Sitwell, or Mauriac, or Anouilh. But these works, and the great mass of documentary and journalistic description from which they sprang, represent a vehement interest in, and passionate feeling about, critical issues, which, however crudely conveyed and analyzed, were a symptom of a conflict of attitudes which in its turn presupposed belief in the possibility of action, and a sense of the presence of boundless resources with which, and for the possession of which, the battle was being fought. The U.S. novel and play referred to above, which had provoked much admiring and indignant reaction in the United States, fell flat in Europe, partly because their lack of intrinsic literary or dramatic interest was no longer half concealed by the urgent nature of the social problems involved or the blunt courage with which they were set forth. The situation in the U.S. in certain striking respects resembled that of Europe 25 years before. The narrow streams of personal and fastidious art—for instance, that of Glenway Westcott, the novelist, or Samuel Barber, the composer, or indeed so rigidly isolated a province as that of Faulkner's south—were so many conscious deviations from that main current of literature and the arts which more truly focused the condition and the moods of the broad central stream of social life; they stood aside from that public arena in which intellectuals fought with philistines, where open and concealed rebels of the type so common in Europe during the previous half century "unmasked" and "exposed" the follies and the vices of the establishment or of tradition or of fashion; above all, there was a feeling that an immense amount was at stake, that the future seemed sufficiently controllable by a concentration of human resources to make the issue genuinely uncertain, the battle worth fighting. The arts and letters of the U.S. in 1949, whatever their other qualities, were the only true heirs to the great social tradition of the 19th century in Europe, with its moral idealism, bitter partisan feeling and those immense public issues which involved the artists deeply and influenced the general outlook of a generation. A great critic like Edmund Wilson was far more representative of the great line of European essayists and critics—Sainte-Beuve or Taine or Mathew Arnold—than anyone writing in Europe in 1949. In so far as T. S. Eliot belonged to this tradition too, he derived from what was most American in him and not from what was most like his contemporaries among European men of letters. In western Europe this broad river seemed to be divided into isolated streams and pools. The French and English figures who represented the main tradition—the widely read "upper middle-brow" novelists and poets and painters—were with the solitary exception of Mauriac, minor figures, rightly made little of by serious critics, and aware themselves, with varying degrees of embitterment, of the fact that their *métier* had outlived itself.[11]

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[8] **HARMONY:** *Post-Wagnerian Harmony; Theoretic Possibilities of the Future;* **HINDEMITH, PAUL.**

[9] **POST-IMPRESSIONISM:** *Cubism;* **PAINTING:** *Cubism.*

[10] **PHILOSOPHY, HISTORY OF:** *Scholasticism and Positivism and Evolution* (for critical turning points in mediaeval and modern philosophy); see also **EMPIRICISM; KNOWLEDGE, THEORY OF:** *Empirical Theories.*

Meanwhile, in the United States, in the fields both of imaginative and quasi-historical, quasi-sociological writing, there was an effort to answer questions, to discover solutions of acute social and individual problems. It was accompanied by an increasing intolerance of heterodox views, by growingly severe tests of loyalty exacted by all parties and sects and movements, by demands for clear alignment and charges and countercharges and declarations of war. And this, however exaggerated the results, and hostile to the disinterested lives and humane forms of culture, was yet evidence of movement, and of passionate moral concern and a capacity for heroism and uncompromising pursuit of ideals whose very fanaticism and violent collision was at any rate characteristic of the atmosphere in which alone major advances come into being. It was not political and economic predominance alone that led to the preoccupation with the U.S. on the part of so many European writers.

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But if the U.S. scene resembled, at any rate in the depth of its preoccupations and antagonisms, that of Europe before the recent war, the cultural conditions of the countries dominated by communism went back to a considerably earlier period—to those of the great religious wars of the 17th century or perhaps earlier still, to the ages of faith and heroic barbarism. In the U.S.S.R. itself the campaign for undeviating conformity to the party line in the realms of literature and art attained new heights in 1949. The limited licence granted to nationalism and even to a certain degree of personal self-expression which had been given during the war years was finally revoked;[12] a political storm, more violent and more widespread than that of 1936–37, began to gather force in the early months of 1949, and finally broke over the heads of all the liberal professions. The dramatic critics were among the earliest victims of this great campaign to standardize all forms of cultural life; adherence was demanded to the party line—a blend of primitive Leninism with an antiwestern chauvinism more violent than any known before, even during the severest purges of 1936–38. All western influences, every form of alleged sophistication or insufficient saturation in the carefully prescribed brand of social content was condemned with unheard-of severity as "formalism" or "grovelling to the West." Those suspected of the least degree of nonconformity, among them nearly all the most honoured names among the survivors of the still quite genuine Russian culture of the '20s and '30s, were subjected to vituperation unparalleled even in the history of Marxist polemics; and although this was more difficult to achieve among the central European nations where western influence and liberal traditions had had a longer history, there too, the immense levelling apparatus had begun to crush the native civilizations and impose the new uniformity.[13]

This process now gained pace in Czechoslovakia, Hungary and Poland, and led to the replacement of their normal literatures by a vast stream of what could be best described as children's or young peoples' books, literally. The novel became the medium for the widest possible inculcation of the simple virtues needed by the regime, and the castigation of the more obvious vices opposed to it. Anything which diverted attention from this simple goal—the idealization of the right kind of citizen in the simplest and crudest colours, calculated to make a strong impact on the least educated reader—was frowned upon as a dangerous form of diversion and a sign of disguised admiration for the corrupt and hostile west. All art forms were subjected to this process; the state in 1949 imposed a degree of conformity to dictated patterns which exceeded all previously known examples of regimentation.[14] Writers and musicians, critics and composers, historians, biologists, physicists, geneticists and even circus clowns confessed their crimes and humbly declared their gratitude to the Communist party for showing them the path to salvation. Attacks on the west grew more unanimous and violent, the mood was as of a school which had been collectively punished for an infringement of discipline, and was anxious to show every sign of contrition and zeal. Styles grew simpler, works of art more uniformly didactic than during the most unquestioning periods in the Middle Ages. Such originality and initiative as were left at all found expression in the relatively nonpolitical corners of nursery rhymes and translations from the west European classics, or of the epics of the Asiatic nations within the Soviet Union; or else in public criticism of western culture, in which there was still opportunity for ingenuity and sharp insight and power of irony and which, therefore, despite the standard of crudity demanded, succeeded at times in giving effective expression to damaging home truths about the art and literature of western countries. Such communication as there was between the U.S.S.R. and the outside world, precarious at the best of times, which had grown somewhat larger during the better relations brought about by alliance during the war years, had diminished steadily since, and in 1949 began to approach vanishing point. Original works of art comparable with the best produced even by the attentuated cultural life of the west scarcely appeared. The purpose of all activity was the training of a certain kind of citizen, and all mental and material resources were concentrated upon this end. The state had evidently decided that its own security and that of its system left it with no margin within which it could afford to permit free self-expression to occur at any level; it was viewed as being at best a luxury, at worst a menace, to the minimum social discipline needed for survival.[15]

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[11] **AESTHETICS:** introductory section and *Artistic Qualities* (for standards in the criticism of art).

[12] **RUSSIAN LANGUAGE AND LITERATURE:** *Post-Revolutionary Prose.*

[13] **CIVIL LIBERTIES:** *For and Against Policies of Liberty* (for a survey of attitudes toward conformity and deviation in all forms of expression, political, social or artistic).

[14] **SLAVERY:** *Russian Serfdom* (for relevant facts on the recency of a feudal way of life in Russia).

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It might seem that no generalization can conceivably apply to such disparate developments occurring in a single human society. There were in being, if not many, at least two worlds, distinct from, and indeed opposed to, each other in every detail of both theory and practice. Yet something like a common tendency was nevertheless discernible. Everywhere the doctrine of social responsibility was gaining ground at the expense of self-assertive individualism and liberal humanism alike. In particular, disciplines were encouraged whose purpose it was to mould human beings in ways likely to make them fit more effectively, and eagerly, into preconceived patterns of social life; and this ideal was advanced at the expense of conceptions of existence in which men were left—or at any rate expressed the wish to be left—relatively undirected to achieve their own triumphs and failures. Avoidance of misery was on the whole cultivated as a goal worthier than the development of independence of character with its record of conflict and frustration. The social sciences began to encroach boldly upon the territory of the older forms of humane learning; the application of social techniques on a wide scale was viewed no longer as a triumphant achievement of human intelligence and skill over human ignorance, or the recalcitrance of the material environment, or as being indispensable to the preservation of what had been won against nature or the consequences of men's own technical achievements, but as being a form of activity valuable in itself. There was a growing preoccupation with the problem of self-preservation and survival in a society growing with an apparently inevitable rapidity less and less capable of creating or protecting what previous generations had sometimes valued beyond life itself—the disinterested discovery of the truth, the cultivation of personal relationships, the making and enjoyment of objects whose social value was of secondary importance.[16] This attitude had already found its way into literature and art before Germany attacked Poland in 1939. But it continued after 1945 with more vehemence and sense of urgency in the United States, and in a more depressed and calm fashion in Europe. French existentialism was perhaps the last Byronic gesture of romantic defiance in which, however hopelessly, and indeed the more hopelessly the more defiantly, a last stand was made against total submergence and dissolution in a world without independent passions or independent responsibility. This growing primacy of social over individual problems—the conception of the individual as an element in this or that social situation or pattern rather than vice versa—was part of the doctrine upon an extreme form of which the Soviet Union had been expressly built, and it had, in fact, advanced further in the west than the survival of cultural forms fully developed in a more individualist age might at first suggest. The sense of the final end of an era was perhaps most explicitly present in the analyses, filled with anxiety and melancholy premonition, of such critics as Arnold Toynbee and Julien Benda, who both published books in the course of the year, seeking to call attention to the final eclipse of the values of the post-Renaissance era. The most obvious symptom of the new age is the half-conscious assumption that personal problems (*e.g.*, the very discussion of aesthetic or moral or intellectual issues as they affect individual decisions and duties) is peripheral, and at times, almost exotic. And per contra all social, political and technological problems and all theories relating to them are in the forefront of attention—as the battlefield where the fate of individuals and nations will be, or is being finally decided. Consequently, all the appeals to return to private life and individual self-examination are considered as being in varying degree voices speaking out of the past, in wilfully eccentric or obsolete terms. In all these respects 1949 saw a further step taken in the direction characteristic of all the years since the end of World War II. It was not a turning point nor did it mark a revolution or a sharp divagation. Nothing had yet occurred enabling men to predict how far the process would carry them, for plainly the world was nearer the beginning than the end of a development of a genuinely new social age to which the monuments of the culture of a liberal bourgeoisie would soon be only an interesting but hardly a haunting memory.

THE POLITICAL ORDER

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SLOWLY and painfully the outline of a political order began to take shape in 1949 out of the chaos left by the wars which Germany and Japan started in the years between 1937 and 1941, and which ended in 1945 in an entirely new and unexpected situation. Not only were Germany and Japan eliminated, at least for a long time to come, as independent centres of world power, but also some of the victors whose strength should have stabilized the postwar period—especially Britain, France and China—emerged dangerously weakened.[1] Only two states were found at the end of the war greatly strengthened in power and influence—and these two states were diametrically opposed in their historical background and in their concept of life. The United States during the war years had increased its productive capacity to a degree unprecedented in history and had truly become the arsenal of democracy; the Soviet Union had followed from 1939 on a policy of large-scale aggrandizement by conquest and ruthless diplomacy, and seized the opportunity of victory to expand its territory and its influence vastly in Europe and Asia.

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[15] **SOCIAL PHILOSOPHY:** ***The General Will*** **(for the relation between individual responsibility and the authority of the state).**

[16] **ATOMIC BOMB:** ***The Future of Atomic Energy;*** **MASS PRODUCTION:** ***The Effects of Mass Production*** **(for examples of neutral developments in science and industry which have contributed to feelings of separation between people and the things they make and do); MONTESSORI METHOD (for a contrary trend in the field of education emphasizing the personal and the individual in experience and behaviour); see also UTILITARIANISM; ETHICS:** ***The Motive of Moral Conduct.***

This new position of unequalled strength possessed by these two giants made the postwar era appear as a polarization of all political and economic relations between the United States and the Soviet Union. In reality, the conflict was not between two powers, but between two systems of life, the Communist dictatorship within which the Soviet Union claimed undisputed and infallible leadership, and a free society among the nations in which the leadership fell to the United States by the accident of its undestroyed wealth and its geographic position. The outcome of the war seemed to have simplified this ideological conflict. For in the 1930s three systems of social organization and political philosophy had competed for the loyalty of man and for the organization of the world.[2] Two of them, communism and fascism, felt themselves at that time heirs of the future, while democracy was on the defensive.[3] World War II eliminated fascism but increased tremendously the confidence and aggressiveness of communism, which during these years fused more and more with the messianic aspects of traditional Russian imperialism.[4] It was only in 1949 that democracy regained full confidence in its own values and began to organize for a reinvigorated survival.

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The year of 1949 marked the first success of the forces of resistance to the sweep of communism and of soviet domination across Europe. Among these forces, the Roman Catholic Church began to play an active role.[5] It had been exposed to violent Communist attacks, especially in predominantly Catholic countries like Hungary and Czechoslovakia, which had fallen under Communist control. In July the Congregation of the Holy Office decided to excommunicate all those Catholics who, knowingly and of their free will, remained in the Communist party and supported and disseminated Communist doctrine.[6] The whole traditional pomp of the church was mobilized when, on Dec. 24, Pope Pius XII opened in Rome the Holy Year, instituted first in 1300 by Pope Boniface VIII. Its spiritual significance was to call upon all Catholics to rally for the defense of the church. Special attention was paid to Italy, the geographic centre of the world-wide organization of the church, where the Catholic Action started in the last days of 1949 a "Crusade of the Great Return" to persuade atheists to return to the fold.

Communism, however, saw its main enemy in democracy, in the system of free representative multiparty government and of liberty of thought and expression.[7] Its hostility was equally directed against democratic capitalism, as flourishing in the United States and in Switzerland, and against democratic socialism, as growing in Britain and Norway. Some of the most vituperative Communist attacks singled out the Socialists and labour leaders as their special target. In countries with Socialist governments the Communists could make no headway. They suffered decisive defeats in 1949 even in lands as close to the U.S.S.R. as Finland and Norway. But the decline of communism was general during 1949 in all democratic countries of the west.

The historical reasons for this decline as they appeared in perspective at the end of 1949 were manifold. In 1946 the Communists had counted upon a repetition of that disunity in the ranks of democracy which followed World War I and which largely made possible the coming of World War II and the temporary triumph of fascism and communism.[8] The experiences of World War II had shown the great resilience of democracy and its survival value even under the most trying circumstances in Britain, and the unprecedented achievements of a free society in the United States. On the other hand, the continuation and even the aggravation of the police state in the Soviet Union and the resurgence of traditional Russian and Pan-Slav imperialism disillusioned many Communist sympathizers in the west. In the years of democratic disunity, the Communist appeal was based upon its advertised humanist promises and its internationalism.[9] Now democracy had regained its vigour, and important social reforms revealed its flexibility which assured to the masses not only individual liberty but much higher material living standards than communism seemed able to offer. And while communism grew more "nationalistic" and even displayed extreme Russian chauvinism, the democratic nations laid in 1949 the foundations of a democratic internationalism which would integrate the free world for close political, economic, military and cultural co-operation.[10] Thus, seen in historical perspective, the year 1949 might mark a new epoch in the development of western civilization and of free society.

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This trend toward a growing solidarity and interdependence of the democracies took a twofold form. One had its roots in old feelings of European community. The events after World War II had reduced Europe—in the cultural sense of adherence to the traditions of free society—to rather narrow limits. Europe was confined to the area which determined its fate up to the 18th century, when Russia and the Balkans began to enter the European family. Now, as then, the peoples speaking Romance or Germanic languages formed Europe, while the western and southern Slav-speaking peoples were separated from the west after World War II and absorbed into Eurasian Russia, which expanded its frontiers in 1945 to a line running from the Elbe to the Adriatic sea. Thus, the postwar division line ran across that Europe which had emerged as a growing cultural unit in the

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[1] BALANCE OF POWER; VIENNA, CONGRESS OF (for 19th-century efforts to realign the balance of power in Europe after Napoleon).

[2] COMMUNISM; DEMOCRACY; SOCIAL PHILOSOPHY: *The Attack on the State* (for the two social ideologies and a discussion of ends and means as related to government).

[3] FASCISM; FASCISM, ECONOMICS OF (for the workings of the first state to exercise total control in modern times).

[4] RUSSIA: *Catherine II: Foreign Policy;* NICHOLAS I: *"Slavophils" and "Westerners"; The Crimean War* and PANSLAVISM (for precedents in fact and theory of current soviet expansionism).

[5] EUROPE: *The Counter Reformation* (for a 16th-century effort by the Catholic Church to reintegrate its position).

[6] GERMANY: *The Kulturkampf* (for a parallel use of excommunication in the 19th century); EXCOMMUNICATION (for the history and usage of this practice of church censure).

[7] PARLIAMENT; BILL OF RIGHTS; COMPETITION IN INDUSTRY and COLLECTIVISM; RUSSIA: *Government and Administration; Collectivization* (for a comparison of the two systems in operation).

[8] EUROPE: *Between Two Wars: The New Europe* (for a survey of the upheaval in domestic and international alignments after World War I).

[9] INTERNATIONAL: *The Third* (*Communist*) *International: Fundamental Principles, Oriental and Colonial Propaganda* (for the Communist tenets which enjoyed wide appeal through the 1930s).

[10] INTERNATIONAL CHAMBER OF COMMERCE; INTERNATIONAL TRADE ASSOCIATIONS AND CONGRESSES: *Post War Reconstruction; Relation to League of Nations* (for attempts at international co-operation among western nations after World War I).

19th century. The victims were the peoples of central-eastern Europe, especially the Czechs, the Poles and the Yugoslavs, who had come out of World War I as victors, fortifying themselves against German and Russian threats by closer ties with the west. These lands fell first after 1938 under German control, and then after 1945 under an even tighter control by Moscow, which rigidly enforced strict obedience and unflinching orthodoxy on the leadership that was to form the iron framework of the Communist union of eastern Europe and northern Asia.[11]

Against this Communist block, free Europe felt the necessity, which many of its liberal thinkers had predicted in the 19th century, to organize a closer integration. The ruthless overthrow of the last vestiges of democracy and of the western spirit by the Communists in Prague, Czech., in Feb. 1948 convinced the free nations of Europe of the need for democratic co-operation. The 50 years' pact of Brussels concluded between Great Britain, France, Belgium, the Netherlands and Luxembourg was followed and widened in 1949 by the formation of the Council of Europe. Its consultative assembly, the embryo of a parliament of free Europe, met in Aug. 1949 for the first time, in Strasbourg, Fr., an ancient city on the Rhine where Romance and Germanic cultural influences had mingled for centuries. Plans for full economic integration of free Europe into a single large market, in which eventually all tariff barriers would be abolished, were advanced by the end of 1949.[12] Thus, the old dream of a united Europe, so fervently proposed by 19th-century Europeans, like Giuseppe Mazzini and Victor Hugo, began to materialize.

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Hugo in 1849 had foreseen that a united free Europe would clasp hands with the United States of America across the Atlantic. This form of democratic co-operation within the common western civilization also began to materialize in 1949. It had its roots in certain trends of United States policy, which were now expanded and adapted to a new situation in which the Atlantic ocean was no longer a barrier but had become a connecting link. The Monroe Doctrine had been dictated by considerations of American security, but also by concern for the preservation of an area of freedom. During World War I Woodrow Wilson clearly recognized that democracy could exist safely in the developing interdependent world only if peace were preserved by collective security, in which the freedom and territorial integrity of all nations, large and small alike, were guaranteed by mutual assistance. Now these trends were taken up in the bipartisan foreign policy of the United States, which was largely supported by public opinion. The new policy expressed itself in the North Atlantic treaty, which was signed in Washington, D.C., by the United States, Canada and ten European nations, and in the Mutual Defense Assistance act, which provided for more than $1,000,000,000 in armaments for the Atlantic pact nations.

In this atmosphere of growing consolidation of the democratic world, even the announcement by the president of the United States that an atomic explosion had been set off in the U.S.S.R. was of no decisive influence. Atomic discoveries had hardly changed the underlying tensions of the international situation, which would have shown themselves much the same after 1945 without these technological changes. Irrespective of them, the way to cope with potential aggression was that of creating an effective collective security as now outlined in the consolidation of the free world. In signing the Atlantic treaty, Pres. Harry S. Truman pointed out that had such a system existed in 1914 and 1939 it might have prevented the outbreak of the two World Wars.

Thus, a promising beginning of political order and economic co-operation among the free nations on both sides of the North Atlantic in 1949 added much to the probability of preservation of peace between the western world and the Communist U.S.S.R. Some of the danger zones of possible conflict were successfully eliminated in 1949. Greece and Turkey, which had formed two years before the goal of imminent soviet expansion, seemed secure by the end of 1949, and the Communist-inspired civil war in Greece had practically ended. The Berlin blockade, which lasted for almost 11 months, was lifted in May without achieving the Communist aim of forcing the western powers out of Berlin. The air superiority of the democracies and the stubborn resistance of the Berlin population were responsible for a peaceful termination of this potentially dangerous Communist pressure. Under the existing conditions no common policy for Germany could be developed. The result was the division of Germany in 1949 into an eastern zone, where a republic modelled after the Communist people's democracies was established under soviet control, and the German Federal Republic with its capital at Bonn on the Rhine and a freely elected parliament. The organization of this federal republic, in which the three zones occupied by the United States, Britain and France, were combined, marked in historical perspective a turning point in German history. Its centre of gravity shifted from the east, where Prussian power and armed victories had located it, to the west, the original home of a German civilization thriving in close touch with the west. The shift of the capital from Berlin to Bonn facilitated the reintegration of Germany into the general trend of the western community from which it had deviated more and more in the period from Otto von Bismarck to Adolf Hitler.[13]

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This voluntary consolidation of the free world contrasted with the enforced consolidation of the Communist sphere. There purges and mass trials were conducted, and some of the formerly most-trusted Communist leaders were executed, like Laszlo Rajk in Hungary and Traicho Kostov in Bulgaria.[14] To cope with the situation in Poland, the U.S.S.R. even appointed one of its own leading generals, Marshal Konstantin Rokossovsky, as commander-in-chief of the Polish army. But the most outstanding fact in the soviet block was the ever-growing rift between the Communist U.S.S.R. and Communist Yugoslavia. Only two years before, Yugoslavia and its leader, Marshal Tito, had been regarded as the backbone of communism outside the Soviet Union, and Belgrade, Yugoslavia's capital, ranked second only to Moscow as a centre of world-wide Communist attraction. In June 1948 the Moscow government and its mouthpiece, the Cominform, or Communist Information bureau, had made public the differences between Stalin and Tito and had demanded the removal of Tito and the submission of Yugoslavia to the Moscow-ordered line. Eighteen months later, at the end of 1949, Yugoslavia's resistance was still unbroken. Though remaining a Communist country, it accused the Soviet Union of betraying the principles of socialism in the service of Russian chauvinism and expansionism. Yugoslavia rejected Moscow's demand for absolute obedience of all Communist parties in the world to the Russian Communist party and its leader.

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[11] GEOPOLITICS (for part of the rationale developed by expansionist nations after World War I as opposed to the self-determinism of nations).

[12] FREE TRADE: *The Free Trade Doctrine;* PROTECTION (for a comparative history of co-operation v. competition in world economy); TARIFFS: *General Survey of the Situation Prior to World War II* (tracing the path of economic nationalism as an attempted solution to the depression after World War I).

[13] BISMARCK, OTTO VON; NATIONAL SOCIALISM (for the policies developed by these two key figures in modern German affairs).

[14] RUSSIA: *Stalin's Leadership and the Purges* (for the first widely publicized purges and the beginning of world disillusionment with communism).

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The beginning consolidation of the situation in Europe found no parallel in Asia. There by the end of 1949 the situation remained fraught with unforeseeable consequences. The beginning of the 20th century had seen a new force entering Asia—nationalism, which later spread with astonishing rapidity.[15] It was a product of Asia's contact with the west; it was a fruit of the new civic ideas which administration by western powers had planted in the hardly prepared soil of the ancient civilizations of the far and middle east. This nationalism had received a great impetus in the events and slogans of World War I. Great popular leaders, like Mustafa Kemal in Turkey, Saad Zaghlul in Egypt, Ibn Sa'ud in Arabia, Mohandas Gandhi in India and Sun Yat-sen in China, aroused and channelled the emotions of the masses in the direction of nationalism.[16] At the very time that the western world tried to overcome nationalism in favour of international co-operation, nationalism began to reach its climax in the east and to put the western powers to the necessity of dealing with a new situation. The United States in the Philippine Islands and Great Britain in its far-flung Asiatic empire took cognizance of the changed circumstances and adapted themselves accordingly to them. The transformation of the British commonwealth was one of the most remarkable facts of peaceful change in history. In Jan. 1950 a British commonwealth conference met, in which India, Pakistan and Ceylon sat as equal members with the older dominions, and which convened characteristically in Colombo, Cey., with Don Stephan Senanayake, prime minister of Ceylon, as host and chairman.

The new Asiatic nations which remained within the British commonwealth or in close treaty relations with the United States—India, Pakistan, Ceylon and the Philippines—weathered the storms of the difficult transitional period with relative success. This example was followed at the end of 1949 by the United States of Indonesia, which emerged after long negotiations as an independent nation remaining united with the Netherlands as an equal partner by the very loose tie of the Dutch crown. Three and a half centuries of Dutch rule over the great island empire came thus to an end. The French were trying at the same time to stabilize the situation in French Indo-China, by recognizing the limited independence of the state of Viêt-Nam under the former emperor of Annam, Bao Dai.

Burma, on the other hand, which had severed its ties with the British commonwealth, continued to present a picture of chaos and disorder. The focus of attention in Asia was, however, centred in China, where the year 1949 saw most momentous developments. There, as in the U.S.S.R., the two great emotional mass forces of nationalism and communism seemed to fuse. The roots of the situation could be traced back as far as the middle of the 19th century, when China entered into closer contact with the west, without receiving under western administration a training in western civic methods. The rising discontent of the Chinese intelligentsia with the backwardness of the ancient empire led to a demand for social reforms and, in 1912, under the leadership of Sun Yat-sen, to the overthrow of the monarchy and the establishment of a republic before the people of China were integrated into a modern nation. The sudden impact of western ideas, without a corresponding background in society and history, made many Chinese young intellectuals receptive to communism. This inclination was supported by the manifest misery of the masses and the ineptness of the governmental machine in coping with the immense problems presented by the transformation of an ancient oriental civilization into a modern nation.[17]

The revolutionary nationalist movement which had overthrown the monarchy in 1912 organized itself as the Kuomintang, and entered in 1923 into an alliance with the Communists. Under the leadership of Chiang Kai-shek, the armies of the Kuomintang succeeded in 1927 in unifying China and in establishing a centralized government in Nanking. After its success, the Kuomintang broke with the Communists, who were able, however, to continue their organization and maintain armed forces in the remote parts of China. Thus, from 1928 on China was in the throes of a civil war. In China the Communists directed not only a party organization but also an army. Nevertheless, the Kuomintang under Chiang Kai-shek grew in strength until the civil war became decisively aggravated by Japanese occupation of Manchuria, the main source of Chinese economic resources, and later on by the Chinese-Japanese War, in which for eight years Chiang Kai-shek's China successfully resisted.

At the end of the war with Japan in 1945, China found itself faced, as a result of the Yalta agreement and the U.S.S.R.'s intervention in the war with Japan, with the loss of the economic resources of Manchuria.[18] There the Chinese Communists could establish a firm basis. The problem of China was thus put up to the United States government and people long before that country had made up its mind about Europe, where a definite U.S. policy was slowly evolved in 1947. The problem of Europe was infinitely easier, because of the community of civilization; the problem of China baffled as much by its immensity as by the unfamiliarity of the country's civilization and thought processes.[19] Under these circumstances the momentous events of 1949 caught the United States in China without a clear policy. During that year the Chinese Communists swept relentlessly from north China across the entire country, so that by its end the national government of China controlled only the two islands of Formosa and Hainan.

Thus, China, with its teeming millions and its as yet unknown resources, became in 1949 an integral part of the Communist dominion. The Chinese Communist leaders repeatedly stressed their complete devotion to, and agreement with, the general party line as ordered by Moscow. They followed it faithfully in their violent attacks against the United States and the democratic world. The Chinese Communist leader, Mao Tze-tung, visited Moscow in mid-December for the declared purpose of strengthening the relations between the Soviet Union, "the first state in world socialism," and China, and promised to intensify the common battle against the "war mongers."

The future of Asia might well be determined by the form of relationship into which the forces of nationalism and communism would enter there. While the Russians were promoting a fusion of these forces—thereby creating a national communism which might lead in the near future to great difficulties for Moscow—the western powers, especially the United States and Britain, were supporting the young indigenous nationalism and trying to embue it with the spirit of democracy. To that end, President Truman outlined in his inaugural address on Jan. 20, 1949, as Point Four a "bold new program for . . . the improvement and growth of underdeveloped areas," by which the standard of living would be slowly raised, thus securing a stable progress toward a good life. By the end of 1949 this long-range program was still in the stage of preliminary discussion. Besides southeast Asia, the middle east and Latin America presented fields for its application.

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[15] **NATIONALISM (for the roots of modern nationalism in the Puritan revolution and 18th-century French philosophy).**

[16] **IMPERIALISM (for changing concepts of empire).**

[17] **CHINA: *The Passing of the Manchus; Domestic Politics after World War I.***

[18] **CHINA: *The Era of Change to the Overthrow of the Manchus* (for an early instance of economic incursions by the U.S.S.R. into China).**

[19] **TAOISM; CONFUCIUS: *His Influence on China* (for two of the dominant philosophies differentiating the east from the west).**

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The first half of the 20th century, a turbulent era of totalitarian barbarism, of revolutionary cruelty and of devastating wars, in which so many of the cultural and political gains of the 19th century were lost, drew to its end with the coming of 1950. In spite of the difficulties which the world still faced, there was good reason to believe that, seen in historical perspective, the year 1949—four years after the conclusion of actual warfare—would be regarded as the first year in which a more consolidated future began to take shape. Much of it was in the tentative stage; whether it could grow beyond this would depend largely on the unity and determination with which the U.S. people, and the leading western European nations, would play their role on the international stage.

It was the unity and determination which the U.S. people had shown to a growing degree in the last three years which had so favourably distinguished the present postwar period from that after World War I, and which made it probable that World War III could be averted. The Marshall plan, the Atlantic treaty, the Point Four program, the Council of Europe, were all steps in the new direction. They would ultimately strengthen the free world and help the United Nations in the preservation of peace.

Their spirit was well expressed by Lester B. Pearson, Canada's representative, in signing the North Atlantic pact in Washington on April 4, 1949: "We are a North Atlantic community of twelve nations. . . . We are strong above all in our common tradition of liberty, in our common belief in the dignity of the individual, in our common heritage of social and political thought and in our resolve to defend our freedoms together. Security and progress, however, like peace and war, are indivisible. So there must be nothing narrow or exclusive about our league; no slackening of our interest in the welfare and security of all friendly people."

1949

JANUARY

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THE year 1950 of the Christian Era corresponds to the year of Creation 5710-5711 of the Jewish calendar; to the year 1369-1370 of the Mohammedan hegira; to the 174th of the United States; and to the 182nd year of the *Encyclopædia Britannica.*

JANUARY 1950

1 New Year's day.
3 Second session of 81st U.S. congress convenes.
4 Independence day, Union of Burma.
6 Epiphany, or Twelfth-night.
8 Jackson day.
13 Festival of St. Veronica.
14 100th anniversary, birth of Pierre Loti, French author.
20 Eve of St. Agnes.
26 Foundation day, Australia.
27 Feast of St. Chrysostom.

FEBRUARY

2 Candlemas. Purification of the Virgin.
2 Gound-hog day.
5 Septuagesima Sunday.
12 Georgia day, U.S.A.
12 Lincoln's birthday, 1809.
14 St. Valentine's day.
16 50th anniversary, U.S. acquisition of American Samoa.
19 Quinquagesima (Shrove) Sunday.
21 Shrove Tuesday. Mardi gras.
22 Washington's birthday, 1732.
22 Ash Wednesday.
24 Feast of St. Matthias.
26 First Sunday in Lent.

MARCH

1 St. David's day, patron saint of Wales.
2 Texas Independence day.
3 Purim (Jewish festival), 1st day.
12 Girl Scout day, U.S.A.
15 Ides of March.
17 St. Patrick's day, patron saint of Ireland.
18 Annular eclipse of the sun, invisible at Washington, D.C. (date as of Greenwich civil time).
21 Equinox (4:36 A.M. Greenwich civil time), beginning of spring.
25 Annunciation. Quarter day.
26 Passion Sunday.
30 Seward day, Alaska.

APRIL

1 All Fools' day.
2 Palm Sunday.
2 Jewish Passover, 1st day.
2 Total eclipse of the moon, invisible at Washington, D.C. (date as of Greenwich civil time).
6 Maundy Thursday.
7 Good Friday. English bank holiday.
9 Easter Sunday.
10 Easter Monday. English bank holiday.
13 Thomas Jefferson's birthday, 1743.
14 Pan-American day.
19 Patriots' day, U.S.A.
19 Primrose day, England.
23 St. George's day.
25 St. Mark's day.
25 Anzac day, Australia and New Zealand.
26 Confederate Memorial day (also May 10, May 30, June 3).

MAY

1 May day. International labour festival.
5 Cinco de Mayo, Mexican holiday.
9 150th anniversary, birth of John Brown, U.S. abolitionist.
14 Rogation Sunday.
14 Mother's day, U.S.A.
17 Independence day, Norway.
18 Ascension day.
20 Armed Forces day, U.S.A.
22 Shebuoth (Jewish Pentecost).
24 Empire day.
28 Pentecost (Whitsunday).
29 Whitmonday. English bank holiday.
30 Memorial (Decoration) day, U.S.A.
31 Union day, Union of South Africa.

JUNE

4 Trinity Sunday.
5 Constitution day, Denmark.
8 Corpus Christi.
9 Trooping the colour in honour of King George VI's birthday. His majesty was actually born on Dec. 14.
11 Kamehameha day, Hawaii.
11 Feast of St. Barnabas.
14 Flag day, U.S.A.
17 Bunker Hill day, U.S.A.
18 Father's day, U.S.A.
21 Solstice (11:37 P.M. Greenwich civil time), beginning of summer.
24 Midsummer day. Quarter day.
24 St. John's day.
30 St. Paul's day.

JULY

1 Dominion day, Canada.
4 Independence day, U.S.A.
4 Independence day, Republic of the Philippines.
5 Independence day, Venezuela.
9 Independence day, Argentina.
12 Orangemen's day, Northern Ireland.
14 Bastille day, France.
15 St. Swithin's day.
21 Independence day, Belgium.
22 Feast of St. Mary Magdalene.
23 Tishah Bov (Jewish Fast of Ab).
25 Occupation day, Puerto Rico.
26 St. Anne's day.
28 Independence day, Peru.

AUGUST

1 Lammas day. English bank holiday.
1 Independence day, Switzerland.
3 50th anniversary, birth of Ernest Taylor Pyle, U.S. war correspondent.
5 100th anniversary, birth of Guy de Maupassant, French author.
6 Feast of the Transfiguration.
10 Feast of St. Lawrence.
14 Independence day, Pakistan.
15 Independence day, India.
15 Assumption of the Blessed Virgin Mary.
24 Feast of St. Bartholomew.

SEPTEMBER

1 11th anniversary, beginning of World War II.
3 100th anniversary, birth of Eugene Field, U.S. poet.
4 Labor day, U.S.A.
7 Independence day, Brazil.
9 100th anniversary, admission of California to the union.
12 Rosh Hashana (Jewish holiday beginning year 5711).
12 Total eclipse of the sun, invisible at Washington, D.C. (date as of Greenwich civil time).
16 Independence day, Mexico.
16 Regatta day, Hawaii.
17 Constitution day, U.S.A.
21 Yom Kippur (Jewish Day of Atonement).
23 Equinox (2:44 P.M. Greenwich civil time), beginning of fall.
25 Dominion day, New Zealand.
26 Total eclipse of the moon, visible at Washington, D.C. (date as of Greenwich civil time).
26 Sukkoth (Jewish Feast of Tabernacles), 1st day.
29 Michaelmas. Quarter day.
30 Feast of St. Jerome.

OCTOBER

4 Feast of St. Francis of Assisi.
12 Columbus day.
12 Mohammedan year 1370 begins at sunset.
18 Alaska day, Alaska.
23 Labor day, New Zealand.
25 St. Crispin and St. Crispinian.
28 Independence day, Czechoslovakia.
31 Hallowe'en.

NOVEMBER

1 All Saints' day. Allhallows.
2 All Souls' day.
5 Guy Fawkes day.
6 Armistice day, Canada.
8 The October Revolution, U.S.S.R.
9 Lord Mayor's show, London.
11 Martinmas, or St. Martin's day.
11 Armistice day.
13 100th anniversary, birth of Robert Louis Stevenson, British author.
16 Feast of St. Edmund.
22 St. Cecilia's day.
23 Thanksgiving day, U.S.A.
30 St. Andrew's day, patron saint of Scotland.

DECEMBER

3 First Sunday in Advent.
4 Hanukkah (Jewish Feast of Dedication), 1st day.
5 Constitution day, U.S.S.R.
6 Feast of St. Nicholas.
8 Immaculate Conception.
16 Dingaan's day, Union of South Africa.
22 Forefathers' day (also Dec. 20, Dec. 21, Dec. 23).
22 Solstice (10:14 A.M. Greenwich civil time), beginning of winter.
25 Christmas. Quarter day. English bank holiday.
26 Boxing day. English bank holiday.
28 Childermas. Holy Innocents' day.
30 Rizal day, Republic of the Philippines.
31 Hogmanay.
31 Feast of St. Sylvester.

CALENDAR OF EVENTS, 1949

For elections and disasters of 1949, see under those headings in the text. For obituaries of prominent persons who died during 1949, see under the entry Obituaries.

JANUARY

1 **Full diplomatic recognition** was granted the Republic of Korea by the U.S.

India and Pakistan ordered a cease-fire in their undeclared war in the state of Kashmir.

Austria was given control of clearance of persons crossing its Italian border by British occupation authorities.

2 **Israeli-held area** in Jerusalem was bombed by unidentified planes.

Organization for European Economic Cooperation requested $4,347,000,000 in U.S. aid to ERP nations for the fiscal year 1950.

3 **U.S. supreme court** upheld the right of states to ban the closed shop.

Rep. Sam Rayburn of Texas was elected speaker of the house of representatives; house voted to curb the power of its rules committee to block legislation.

4 **U.S. state dept.** announced that, following talks with the British ambassador over an incursion of Israeli troops into Egypt, it had urged the Israeli government to avoid any action which might aggravate the situation in Palestine.

5 **Pres. Harry S. Truman** in his annual state of union message to congress called for a "Fair Deal" program highlighted by increased taxes, adoption of civil rights program and repeal of the Taft-Hartley law.

Cessation of "police action" against republican areas in Sumatra was ordered by the Dutch commander in Indonesia.

6 **United Nations Mediator Ralph Bunche** announced acceptance by both Israel and Egypt of a cease-fire order.

British government asserted that Czechoslovakia had supplied Israel with war materials in violation of U.N. arms embargo.

Prime ministers of Great Britain and Northern Ireland reaffirmed that the latter's constitutional status would not be changed without its consent.

7 **Resignation of Secy. of State George C. Marshall** was accepted by Pres. Truman, who announced that former undersecy. Dean G. Acheson would succeed Marshall.

5 R.A.F. planes were shot down by Israeli aircraft. British air ministry claimed action took place over Egyptian territory, while Israel insisted craft had crossed border into Palestine.

Pres. Truman called for 1,000,000 more job opportunities and a 3% to 4% increase in production in 1949 in his annual economic report to congress.

8 **British foreign office** confirmed the dispatch of British forces to port of Aqaba on the Red sea at the request of the government of Trans-Jordan.

10 **Annual budget** submitted to congress by Pres. Truman for fiscal year beginning July 1, 1949, put expenditures at $41,857,777,869, revenues at $40,984,645,347, military costs at $14,267,500,479 and international aid at $6,708,816,067.

Withdrawal of all Israeli forces from Egypt was reported by Israeli army headquarters.

U.S. military governor Lucius D. Clay reported signs of a revival of extreme nationalism in Germany.

11 **Dutch "police action"** in Indonesia was denounced as a clear violation of U.N. Security council orders by U.S. delegate Philip Jessup.

12 **Prices and wages in France** were frozen by government decree at levels prevailing at the end of 1948.

13 **Israeli and Egyptian** representatives began armistice negotiations on the island of Rhodes under the supervision of U.N. mediator Ralph Bunche.

Serious rioting broke out in Durban, U. of S. Af., between Africans and Indians.

14 **U.S. dept. of justice** sought separation of American Telephone and Telegraph Co. from its manufacturing subsidiary, Western Electric Co., Inc., in an antitrust suit filed in Newark, N.J.

Chinese Communist leader Mao Tse-tung demanded the unconditional surrender of nationalist regime in an 8-point counterproposal to Chiang Kai-shek's offer of peace.

United Kingdom and Poland concluded trade pact calling for the exchange of £260,000,000 (about $1,040,000,000) in goods in period 1949–53.

Gift of £8,000,000 (about $32,000,000) was presented to Britain by Australia.

15 **Tientsin** was reported to have been captured by Chinese Communist troops.

17 **Trial** of 11 leading U.S. Communists for plotting overthrow of U.S. government opened in New York city befor federal judge Harold R. Medina.

Congress completed action on a bill raising Pres. Truman's salary from $75,000 to $100,000 and giving him a new tax-free allowance of $50,000. Bill also increased salary of vice-president and speaker of the house.

U.S., Britain and France disclosed that the tripartite Military Security board for preventing the revival of German militarism had become operative.

18 **Senate** confirmed the nomination of Dean G. Acheson as secy. of state by vote of 83 to 6.

New regulations for tightening control of trade between western and eastern Berlin were issued by U.S., British and French authorities.

19 **British Trades Union congress,** Dutch Federation of Labour and the C.I.O. withdrew from the World Federation of Trade Unions, charging that it was Communist-dominated.

Loan of $35,000,000 to state of Israel for purchase of agricultural materials in the U.S. was announced by the Export-Import Bank of Washington.

20 **Harry S. Truman** and Alben W. Barkley were inaugurated as president and vice-president of the U.S.; Pres. Truman proposed in his inaugural address a "bold new program" for improving the world's underdeveloped areas.

Delegates and observers of 19 countries met in Asian conference at New Delhi, India, to consider the Indonesian situation.

Premier Themistocles Sophoulis formed a new 5-party coalition cabinet in Athens, Greece; Gen. Alexander Papagos was named supreme commander of the armed forces.

Soviet State Planning commission reported that Russian industrial production in 1948 exceeded the 1940 level by 18% and the 1947 level by 27%.

21 **Generalissimo Chiang Kai-shek** retired as president of China to facilitate peace talks with the Communists; Vice-Pres. Li Tsung-jen became acting president.

Military regimes established by revolution in Venezuela and El Salvador were recognized by the U.S.

22 **Peiping,** cultural capital of China, surrendered to Chinese Communist troops.

23 **U.S. air force** inaugurated Operation "Haylift" to drop feed to blizzard-bound cattle and sheep in western states.

Democratic Liberal (conservative) party won absolute majority of seats in Japanese diet elections.

24 **Chinese Communist** forces were reported to have reached the north bank of the Yangtze river.

25 **Formation of Council for Mutual Economic Assistance,** composed of all major members of soviet eastern European bloc except Yugoslavia, was announced in Moscow.

Prime Minister David Ben-Gurion's Mapai (moderate Socialist) party won plurality in elections for Israeli constituent assembly.

26 **British Foreign Secy. Ernest Bevin** won comparatively close 283–193 vote of confidence in house of commons on his handling of the Palestine problem.

U.S. army advisory group to Chinese nationalist regime was formally terminated.

27 **House un-American activities committee** reported that espionage and other treasonable operations were the primary purpose of the Communist party in the U.S.

Rep. Hugh D. Scott, Jr., was retained as national chairman of the Republican party by a close vote of the national committee.

28 **U.N. Security council** called upon the Netherlands to halt fighting, release Indonesian political prisoners and transfer sovereignty over Indonesia to the United States of Indonesia by July 1950.

Burmese port of Bassein was seized by native Karen insurgents.

Members of the western European union (Belgium, Great Britain, France, Luxembourg

JANUARY—*Continued*

and the Netherlands) agreed to form a federative Council of Europe.

29 **Soviet foreign ministry** accused Britain and the U.S. of undermining the U.N. by supporting plans for a North Atlantic alliance.

De facto recognition of the state of Israel was announced by the British foreign office.

30 **Pres. Juan Natalicio González** of Paraguay was deposed in a bloodless coup led by dissident members of his own Colorado party.

Soviet Premier Joseph Stalin stated that he had no objection to meeting with Pres. Truman for consideration of a soviet-U.S. "pact of peace."

Norway, Sweden and Denmark reported their inability to agree upon a Nordic alliance not tied to either the west or to the soviet bloc.

31 **Full diplomatic recognition** to the governments of Israel and Trans-Jordan was announced by the White House.

U.S. supreme court upheld, 5 to 4, a Trenton, N.J., ordinance banning "loud and raucous" sound trucks on the city streets.

Administration-sponsored bill to repeal Taft-Hartley labour law and replace it with an amended National Labor Relations act was introduced by Sen. Elbert Thomas.

Selim Sarper of Turkey was elected chairman of U.N. "Little Assembly," which voted to continue its study of peaceful methods to settle international disputes.

FEBRUARY

1 **Veterans' Administrator Carl R. Gray, Jr.,** told house veterans' affairs committee that proposals for pensioning all disabled and aged war veterans were contrary to Pres. Truman's budget policy and also to established congressional policy.

U.N. Trusteeship council rejected soviet and Philippine resolutions to let native representatives of trust territories attend its sessions.

2 **Secy. of State Dean G. Acheson** described Premier Stalin's suggestion for a meeting with Pres. Truman as an "international political maneuver."

Atty. Gen. Tom C. Clark advised senate labour committee that the president could seek injunctions in national emergency strikes without specific statutory authority.

3 **Pres. Truman** stated he would not meet Premier Stalin overseas and reiterated the determination of the U.S. not to enter into negotiations with the Soviet Union outside the councils of the U.N.

Joseph Cardinal Mindszenty, Roman Catholic primate of Hungary, at the opening of his trial in Budapest, admitted his guilt in principle but denied plotting to overthrow the Hungarian Communist regime.

4 **Mohammed Riza Pahlavi,** shah of Iran, was injured in assassination attempt by member of leftist Tudeh party.

British and U.S. authorities in Germany announced imposition of counterblockade barring passage of trucks between the Anglo-U.S. bizone and the soviet zone or countries beyond.

5 **Surrender of Japanese war criminals** in China was demanded by Chinese Communists as an additional condition of peace.

Soviet Union offered to conclude a nonaggression pact with Norway and warned that country against joining the proposed North Atlantic alliance.

Economic Cooperation administration and commerce dept. cleared Britain, Belgium and the Netherlands of charges of selling ERP aluminum and lead back to the U.S. at a profit.

7 **Hoover Commission on Organization of the Executive Branch of the Government** issued its first report, recommending reduction in number and reorganization of bureaus and agencies in the executive branch.

8 **Cardinal Mindszenty** was sentenced to life imprisonment on conviction of treason and other offenses against the Hungarian Communist government.

U.S. air force XB-47 jet bomber crossed the continent in 3 hr., 46 min., averaging 607.2 m.p.h.

Secy. of State Dean G. Acheson told senate and house foreign affairs committees that nations receiving ERP aid had shown improvement in almost every phase of their national life.

9 **Negotiations** on a peace treaty with Austria were resumed by deputies of the foreign ministers of the U.S., Britain, France and the U.S.S.R.

10 **U.N. Security council** rejected soviet proposal that each member of the Big Five list its armed strength and armaments, including atomic bombs.

15 Protestant clergymen were charged by Bulgarian government with espionage on behalf of Britain and the U.S.

Parliamentary elections in Northern Ireland gave large majority to Unionist party favouring partition of Ireland and continued union of Northern Ireland with Great Britain.

Philip Jessup was named U.S. ambassador at large for special assignment to important international meetings.

Details of an ingenious prewar soviet espionage ring centred in Tokyo, Jap., were released by U.S. army dept.

11 **Gen. Dwight D. Eisenhower,** president of Columbia university, was named temporary presiding officer of joint chiefs of staff and principal military adviser to Pres. Truman and the secy. of defense.

Rejection of Yugoslavia's protest against its exclusion from Council for Mutual Economic Assistance was reported by Moscow.

12 **Pres. Truman** and Canadian Prime Minister Louis St. Laurent conferred in Washington, D.C., on international problems affecting the U.S. and Canada.

Hungarian government demanded the recall of Selden Chapin, U.S. minister in Budapest.

The Vatican announced the excommunication of all persons involved in the trial and conviction of Cardinal Mindszenty.

Eire's minister for external affairs declared Eire could not take part in the proposed North Atlantic alliance so long as Ireland remained partitioned.

13 **Marshal Antonio Oscar de Fragoso Carmona** was re-elected without opposition for 4th consecutive 7-yr. term as president of Portugal.

American Medical Assn. announced a voluntary medical care plan in opposition to proposed compulsory health insurance plan of Pres. Truman.

14 **Congress** was urged by the 3rd report of the Hoover commission to put all federal housekeeping functions into single agency directed by the president.

U.S. delegate Willard Thorp charged before the U.N. Economic and Social council that the Soviet Union had between 8,000,000 and 14,000,000 people in forced labour camps, and asked for investigation.

Sen. Tom Connally, chairman of senate foreign relations committee, asserted that proposed North Atlantic pact would not automatically require the U.S. to go to war if another member of the alliance were attacked.

15 **Soviet delegate Semyon K. Tsarapkin** told U.N. Economic and Social council that Soviet Union would not allow investigation of alleged slave labour camps.

16 **Shigeru Yoshida** formed a new, predominantly Democratic Liberal (conservative) cabinet in Tokyo, Jap.

Gen. Lucius D. Clay requested withdrawal of soviet repatriation mission from the U.S. zone of Germany by March 1.

World Health organization announced withdrawal from its membership of the Soviet Union, Ukrainian S.S.R. and Byelorussian S.S.R.

The pictures on this page are, left to right:

MAO	Jan. 14
MEDINA	Jan. 17
TRUMAN	Jan. 20
STALIN	Jan. 30
ACHESON	Feb. 2

FEBRUARY—*Continued*

Interim constitution providing for parliamentary form of government modelled on that of Britain was adopted by the Israeli constituent assembly (knesset hagdola).

17 **Hoover commission** recommended that the post office dept. be taken out of politics and placed on a business basis.

Chaim Weizmann was elected first president of Israel by the constituent assembly.

Proposal by soviet delegate Jacob A. Malik that the U.N. Security council appoint a governor for the Free Territory of Trieste was rejected by U.S., French and British delegates.

18 **Edwin G. Nourse,** chairman of Pres. Truman's council of economic advisers, characterized current price declines and increases in unemployment as "disinflation."

An R.A.F. plane flew the 1,000,000th ton of supplies into Berlin since the inauguration of the air lift.

Argentina withdrew from the International Wheat conference on ground that prices offered by importer nations were not high enough.

20 **Showing in Berlin** of British film version of Charles Dickens' novel *Oliver Twist* was halted by demonstrations by Jews and some Germans.

10-day strike of trolley, bus, subway and elevated workers in Philadelphia, Pa., ended with their acceptance of small wage increase.

21 **Peaceful picketing** in support of a secondary boycott was held by National Labor Relations board to be violation of Taft-Hartley law.

2 bills for liberalizing and expanding the federal social security system in accordance with Pres. Truman's proposals were introduced by Rep. Robert Doughton (Dem., N.C.).

22 **Lord Soulbury** was named governor general of the dominion of Ceylon in succession to Sir Henry Monck-Mason Moore.

British plans to reduce army strength from 850,000 to 550,000 officers and men were revealed in army budget estimates.

French Communist leader Maurice Thorez implied that French Communists would aid the soviet army if it should invade France.

Soviet army was told by armed forces minister Nikolai Bulganin to maintain constant combat readiness to meet threat of U.S. aggression.

23 **British delegate Christopher P. Mayhew** told the U.N. Economic and Social council that British economic recovery was virtually complete.

24 **Israel and Egypt** signed a general armistice agreement at U.N. mediation headquarters on the island of Rhodes.

South African Prime Minister Daniel F. Malan said no further trusteeship reports would be sent to the U.N. on South-West Africa.

30 Republican congressmen demanded more U.S. aid for Chinese nationalists in meeting with Secy. of State Dean G. Acheson.

25 **General Motors Corp.** made its first postwar price cuts on its entire line of passenger cars and trucks.

James G. McDonald, U.S. representative in Tel Aviv, Israel, was appointed 1st U.S. ambassador to Israel by Pres. Truman.

26 **Chancellor of the Exchequer Sir Stafford Cripps** denied that British recovery was complete and reiterated Britain's dependence on ERP aid.

Paraguay's 2nd revolution within a month ousted Gen. Raimundo Rolón as president in favour of Felipe Molas López.

Netherlands government announced its decision to transfer sovereignty over Indonesia before the July 1, 1950, deadline set by U.N. Security council.

Palmiro Togliatti, Italian Communist chief, asserted that Italian Communists would be duty-bound to aid the soviet army if it should invade Italy in pursuit of an aggressor.

27 **Fighting** between elements of Siamese army and navy was brought to an end through personal intervention of Prime Minister Luang Pibul Songgram.

28 **Soviet Premier Stalin** announced sharp price cuts in 45 categories of consumers' goods.

Indian Prime Minister Jawaharlal Nehru reported widespread arrests in connection with proposed railway strike and warned that Communist activities had reached stage approaching "open revolt."

Far eastern members of the Commonwealth of Nations, meeting in New Delhi, India, offered to mediate the civil war in Burma.

Hoover commission recommended that U.S. military forces be brought under the undisputed control of the secy. of defense in order to end interservice rivalries and effect real unification.

Sen. Walter F. George of Georgia began southern fight against proposed amendment to senate rules destroying right of unlimited debate.

MARCH

1 **Joe Louis** retired as world heavyweight boxing champion and said he would become a prize fight promoter.

2 **U.S. air force** B-50 Superfortress landed at Fort Worth, Tex., to complete first nonstop round-the-world flight.

Federal reserve board ordered further relaxation of curbs on instalment credit buying.

Decree of Rumanian government confiscated all large farms of 123 ac. or more still owned by private landowners.

3 **Norway** rejected offer of nonaggression pact by Soviet Union and accepted invitation to join the North Atlantic treaty negotiations.

Chinese Premier Sun Fo stated that formal peace talks with the Chinese Communists were expected to begin in the near future.

Pres. Truman accepted the resignation of James Forrestal as secy. of defense and said Louis A. Johnson would succeed him.

4 **U.N. Security council** approved admission of Israel by 9 votes to 1, with Egypt voting against and Britain abstaining.

Moscow radio announced that soviet Foreign Minister Vyacheslav M. Molotov had been replaced by Andrei Y. Vishinsky; Molotov retained post of deputy premier.

Soviet repatriation mission left Frankfurt on Main, Ger., after 2-day blockade of its office by U.S. army.

U.S. navy flying boat "Caroline Mars" broke its own world passenger-load record by carrying 269 persons in flight from San Diego to San Francisco, Calif.

Judith Coplon, U.S. dept. of justice employee, and Valentin A. Gubitchev, a soviet U.N. aide, were arrested on suspicion of espionage.

6 **Production of plutonium** for first time in Britain was reported by British ministry of supply.

7 **Egypt** and the Suez Canal Co. signed agreement giving Egypt greater participation in canal's management and a larger share of its profits.

Centralization of all major nonregulatory transportation activities in commerce dept. was recommended by the Hoover commission.

U.S. supreme court ruled that neither Wagner act nor Taft-Hartley act prohibited the states from imposing more severe restrictions on labour union security contracts.

Denmark, Eire, Italy, Norway and Sweden were invited to join negotiations for creation of a Council of Europe.

8 **Independence** of state of Viêt-Nam (Indo-China) within French union was recognized in exchange of letters between French Pres. Vincent Auriol and Bao Dai, former emperor of Annam.

Premier Sun Fo of China resigned with his cabinet.

The pictures on this page are, left to right:

JESSUP	Feb. 10
YOSHIDA	Feb. 16
MALIK	Feb. 17
JOHNSON	March 3
COPLON	March 4

MARCH—*Continued*

9 **Skirmishing** was reported between Trans-Jordan's Arab legion and Israeli forces in southern Negeb near Aqaba, Trans-Jordan.

10 **Mildred E. Gillars,** the "Axis Sally" of the nazi radio, was found guilty of treason by federal jury in Washington, D.C.

Acting Pres. Li Tsung-jen nominated Gen. Ho Ying-chin to be premier of nationalist China.

Soviet Finance Minister A. G. Zverev presented record budget estimating revenue at 445,208,000,000 roubles and expenditure at 415,350,000,000 roubles.

11 **Israel and Trans-Jordan** signed a cease-fire agreement to be supervised by U.N. observers.

12 **Hoover commission** recommended reorganization of the 9 government regulatory commissions to reduce red tape and useless delay and expense; also urged higher salaries for commission members.

Mandalay, Union of Burma's 2nd city, was reported to have been captured by Karen insurgents.

13 **Belgium, Luxembourg and the Netherlands** agreed to make their economic union effective on July 1, 1950.

14 **425,000 United Mine Workers** east of Mississippi river began 2-week work stoppage on order of John L. Lewis in protest against appointment of James Boyd as director of federal bureau of mines and as memorial to miners killed or injured during 1948.

Chinese Communists announced creation of a regional government for a 3-province area north of the Yangtze river.

Rationing of clothing was completely abolished in Britain.

15 **Nomination** of Mon C. Wallgren to be chairman of national security resources board was tabled by senate armed services committee.

16 **Cruiser U.S.S. "Milwaukee,"** loaned to Soviet Union in 1944, was returned to U.S. navy in state of neglect.

Pres. Juan D. Perón of Argentina took oath of allegiance to new constitution replacing that of 1853 and permitting him to succeed himself.

State dept. granted permission to 23 eastern European delegates to attend Cultural and Scientific Conference for World Peace in New York, N.Y.; it denounced the conference as a Communist sounding board.

17 **Denmark, Iceland, Italy and Portugal** were invited to join the North Atlantic alliance.

Senate voted 63 to 23 in favour of compromise antifilibuster rule allowing closure only on vote of ⅔ of all senators.

18 **Draft of proposed North Atlantic treaty** was made public; Secy. of State Dean G. Acheson emphasized its purely defensive nature in an explanatory statement.

Foreign Secy. Ernest Bevin told British house of commons that North Atlantic treaty was one of the greatest steps toward world peace since the end of World War I.

Sweden sharply rejected 2nd soviet note charging Swedish authorities with preventing the return to their homes of Baltic refugees in Sweden.

Senate passed a house-approved bill authorizing a U.S.-Canadian radar screen to protect North America from air attack.

19 **Constitution** purporting to apply to all of Germany was adopted by Communist-led People's council in soviet zone.

20 **Railroads and 16 unions** agreed to reduce work of 1,000,000 nonoperating employees from 6-day 48-hr. week to 5-day 40-hr. week without loss of pay, effective Sept. 1, 1949, and to increase their wages 7 cents per hour retroactive to Oct. 1, 1948.

Western deutschemark was made the only legal tender in western sectors of Berlin.

Government of Trans-Jordan revealed that under 1948 treaty it had requested aid from Britain to defend its southern frontier against Israeli incursions.

21 **Fleet Adm. Chester W. Nimitz** was named administrator of U.N. plebiscite to be held in state of Kashmir.

Hoover commission recommended a new department of cabinet rank to direct the national welfare and education programs of the U.S.

British government invoked 3-month ban on London political parades following riot between Communists and fascists in north London.

22 **Canadian Finance Minister Douglas Abbott** presented 1949–50 budget estimating revenue at $2,477,000,000 and expenditure at $2,390,000,000; he proposed reductions in income and other taxes.

23 **U.N. mediator Ralph J. Bunche** charged that both Israel and Trans-Jordan had violated their truce by troop movements in the Aqaba area.

Secy. of State Dean G. Acheson labelled as false charges made by U.S.S.R. that Iran was being converted into a U.S. military base.

Lebanon and Israel signed an armistice agreement providing for evacuation of Israeli forces from Lebanese territory.

International wheat agreement allocating 456,000,000 bu. a year was signed in Washington, D.C.; Argentina and Soviet Union did not participate.

24 **U.S. bureau of labour statistics** reported a drop in consumer prices for 5th consecutive month.

House voted 208 to 207 to send veterans' pension bill back to committee for further study.

Marshal Alexander M. Vasilevsky was named to succeed Marshal Nikolai A. Bulganin as soviet armed forces minister, Moscow radio announced.

25 **Government of Denmark** announced its decision to join the North Atlantic alliance.

Opening session of Cultural and Scientific Conference for World Peace in New York, N.Y., was heavily picketed by veterans', religious and other groups.

Pres. Truman accepted resignation of Lieut. Gen. Walter Bedell Smith as ambassador to Soviet Union.

26 **Italy and France** signed agreement in Paris to set up customs union within a year.

Chinese Communist central committee announced its willingness to begin peace negotiations in Peiping with a nationalist delegation.

31 minor rectifications in Germany's western frontiers in favour of Belgium, France, Luxembourg and the Netherlands were announced by commission made up of those nations plus U.S. and Great Britain.

27 **Italy's** adherence to the North Atlantic alliance was assured when desperate Communist opposition was overridden by favourable vote of Italian senate.

Rapid development of water power and of synthetic fuels was said to be essential to nation's security by Interior Secy. Julius A. Krug in annual report.

28 **Margin requirement** for stocks was cut from 75% to 50% by federal reserve board, effective March 30.

Louis A. Johnson was sworn in to succeed James Forrestal as secy. of defense.

Representatives of 10 western European nations began consideration in London of draft proposals for creation of Council of Europe.

29 **Marshal Vasili D. Sokolovski,** soviet commander in Germany, was appointed first deputy armed forces minister of the U.S.S.R., according to Moscow radio; Gen. Vasili I. Chuikov succeeded him in Germany.

30 **Syrian government** was overthrown in bloodless coup d'état led by Col. Husni ez-Zaim, army chief of staff.

Pres. Truman signed bill extending federal rent control for 15 months but giving states and localities an option to end controls earlier.

31 **Soviet Union** roundly denounced the North Atlantic treaty as an openly aggressive instrument directed against the U.S.S.R. and violative of U.N. charter.

U.N. Relief and Rehabilitation administration was formally dissolved in Washington, D.C.; its final report showed it had spent $3,968,392,725, of which 73% came from the U.S.

British crown colony of Newfoundland became Canada's 10th province at midnight.

Winston Churchill told Boston, Mass., audience that Soviet Union would have overrun western Europe and attacked Britain if it had not feared U.S. atomic bomb.

APRIL

1 **Hoover commission** charged in its final report that inefficiency, waste, favouritism and even corruption marked the administration of many of the federal government's more than 100 business enterprises.

2 **Defense Secy. Louis A. Johnson** ordered abolition of 9 boards in the defense departments.

Foreign ministers of the 12 adherents of the North Atlantic treaty jointly rejected the Soviet Union's protest against the alliance.

Bulgaria, Hungary and Rumania were formally accused by Britain and the U.S. of having denied human rights and freedoms in violation of peace treaties.

3 **Israel and Trans-Jordan** signed an armistice agreement valid for 1 yr. and renewable thereafter.

APRIL—*Continued*

Attempted army revolt against Costa Rica's provisional junta was suppressed in San José.

4 **North Atlantic treaty** was signed in Washington, D.C., by representatives of the U.S., Canada, Iceland, Denmark, Norway, the Netherlands, Belgium, France, Luxembourg, Great Britain, Italy and Portugal.

Bulgarian Vice-Premier Traicho Kostov was reported to have been dismissed for sympathy with nationalistic policies and deviation from prosoviet line, and placed under arrest.

5 **Formal negotiations** for a cease-fire were opened at Peiping by Chinese nationalist and Communist delegations.

Herbert Evatt, president of U.N. general assembly, at assembly's opening session at Lake Success, N.Y., warned that all regional pacts must be subordinated to U.N. charter.

Soviet Union protested minor alterations in Germany's western frontiers agreed upon by the western powers.

6 **Pres. Truman** declared he would not hesitate to order use of the atomic bomb again if the welfare of the U.S. and the democracies of the world demanded it.

Chancellor of the Exchequer Sir Stafford Cripps presented British budget for fiscal year 1949–50, estimating revenue at £3,777,750,000 and expenditure at £3,308,368,000.

Attorneys for 11 Communist leaders on trial in New York, N.Y., assailed as an "unfair surprise" testimony by Herbert A. Philbrick, Communist party member who had been secretly reporting to FBI.

7 **Stephen T. Early,** press secy. to Pres. Franklin D. Roosevelt, was named 1st defense undersecy.

Agriculture Secy. Charles F. Brannan presented to congressional agriculture committees a new plan for providing food at low prices to public while assuring farmers a stable income through government production subsidies.

British Labour party lost to conservatives in elections for London county council.

8 **Soviet delegate Jacob A. Malik** vetoed application of the Republic of Korea for membership in the U.N.

Fighting was renewed between Burmese army and Karen insurgents when peace negotiations broke down.

Agreement on all questions relating to the formation and control of a western German state was announced in Washington, D.C., by Britain, France and the U.S.

State dept. revealed that Brussels treaty powers (Belgium, France, Luxembourg, the Netherlands and Great Britain), as well as Denmark, Italy and Norway, had requested aid from the U.S. for execution of their common defense program.

9 **International Court of Justice** found Albania responsible for the mining of 2 British destroyers in Corfu channel.

10 **German** parliamentary council at Bonn was handed text of statute defining the authority to be retained by U.S., British and French occupation officials after the inauguration of the western German republic.

11 **Herbert Hoover** told senate armed services committee that commission headed by him had uncovered evidence of "staggering" waste in the national military establishment.

Union demands for a 2nd engineer in multiple-unit diesel-electric locomotive operations were rejected by a presidential fact-finding board.

South African parliament completed action on a bill giving parliamentary representation to South-West Africa.

12 **U.N. general assembly** voted to debate Hungary's trial of Cardinal Mindszenty, Bulgaria's trial of 15 Protestant clergymen and situation in Indonesia.

Canadian-U.S. Joint Industrial Mobilization committee was established to co-ordinate plans for putting defense industries into full-scale operation in an emergency.

Soviet Union agreed to give Albania equipment and materials on credit to compensate for loss of trade with Yugoslavia.

13 **Israel** signed a cease-fire agreement with Syria, the last Arab state opposing Israel in Palestine.

Pres. Truman sent special message to congress asking creation of a Columbia valley administration for power, flood control and irrigation in Pacific northwest.

U.S., Britain and France made public agreements to retain in Germany 159 plants previously scheduled for dismantling and to permit production in previously prohibited industries.

14 **Congress** completed action on compromise bill authorizing expenditure of $5,430,000,000 for European Recovery program in period ending June 30, 1950.

19 former nazi officials and military leaders—the last defendants scheduled for trial—were given prison terms by U.S. war crimes tribunal.

U.N. general assembly adopted resolution calling for moderation in use of veto by the Big Five in the Security council.

Secy. of State Dean G. Acheson was revealed to have urged senate foreign relations committee not to approve more military aid to nationalist China.

15 **Pope Pius XII** published an encyclical calling for internationalization of Jerusalem and other holy places in Palestine.

16 **U.S. and British planes** flew record total of 12,941 tons of supplies into Berlin in 24-hr. period.

17 **Chinese Communists** served peace ultimatum including demands for an unopposed crossing of the Yangtze river and integration of nationalist forces into the Communist armies.

18 **Eire** formally became the Republic of Ireland as a law took effect cutting the last link with the U.K.

U.S. supreme court ruled that a Nevada divorce could be declared invalid if the divorced person had not been served personally in Nevada and represented at proceedings.

19 **Chinese Communist** peace ultimatum was rejected as tantamount to unconditional surrender by nationalist leaders, who asked for a cease-fire and further negotiations.

20 **Vice-Adm. Alan G. Kirk,** U.S. ambassador to Belgium, was named U.S. ambassador to the U.S.S.R.

2 British warships were shelled as Chinese Communists reopened hostilities along the Yangtze river.

Delegates of 21 nations opened conference of European Movement in London.

Negro singer Paul Robeson, in speech at opening session of prosoviet World Congress of the Partisans of Peace in Paris, asserted that U.S. Negroes would not fight against the Soviet Union.

German Social Democratic party leaders assailed determination of western Allies that projected western German state must not have a strong central government.

21 **Administration** leaders, including Secy. of State Dean G. Acheson, estimated cost of U.S. aid under North Atlantic treaty at $1,130,000,000 for fiscal year 1950 in testimony before senate foreign relations committee.

Pres. Truman accepted resignation of Army Secy. Kenneth C. Royall and named David K. E. Bruce to succeed Jefferson Caffery as U.S. ambassador to France.

Chinese Communist forces were reported to have crossed the Yangtze river at several points.

22 **Federal reserve board** further relaxed instalment buying controls.

Pres. Truman sent special message to congress urging enactment of legislation providing for compulsory health insurance system.

23 **Defense Secy. Louis A. Johnson** ordered cessation of work on U.S. navy's 65,000-ton supercarrier "United States."

Administration of several minor German border areas was taken over by Belgium, Luxembourg and the Netherlands.

Polish embassy in Washington, D.C., was described as a centre of Communist espionage in U.S., in evidence released by house un-American activities committee.

24 **Nanking,** capital of China, was captured by Chinese Communist forces without opposition.

25 **Western German** political leaders and U.S., British and French military governors reached full accord on terms of constitution for projected German federal republic.

Soviet Union's refusal to permit Russian wives of foreigners to leave Russia was held by general assembly to be a violation of U.N. charter.

26 **Navy Secy. John L. Sullivan** resigned in protest against decision to abandon construction of U.S. navy supercarrier.

Tass dispatch reported soviet willingness to lift Berlin blockade if western powers would end counterblockade and set date for a Council of Foreign Ministers' meeting on Germany; state dept. confirmed reports of soviet-U.S. negotiations.

Syrian Premier Husni ez-Zaim warned King Abdullah ibn Hussein of Jordan (formerly Trans-Jordan) against trying to

APRIL—*Continued*

annex Syria under his "greater Syria" plan.

27 **Soochow** was captured by Chinese Communist forces in their advance on Shanghai.

Delegates of Israel and the Arab nations met at Lausanne, Switz., under auspices of U.N. Conciliation Commission for Palestine to confer on permanent solution of Palestine problem.

28 **International Olympic committee** chose Melbourne, Austr., as site of 1956 Olympic summer games and Cortina, Italy, as site of winter games.

Declaration issued in London by commonwealth conference assured retention of projected Indian republic in commonwealth by recognition of British crown as symbol of free association of independent nations.

Maj. Gen. Philip B. Fleming, Federal Works administrator, was named chairman of U.S. maritime commission.

Statement by Pres. Truman implying that patronage would be withheld from Democrats who did not support administration labour bill was attacked by southern Democrats.

29 **U.S. occupation officials** were charged by investigating group appointed by former secy. of army Kenneth C. Royall with having ignored a presidential order to break up German industrial cartels.

Canadian house of commons unanimously ratified the North Atlantic treaty.

30 **Chinese Communist** radio demanded the withdrawal from China of U.S., British and French military units.

Bulgaria and Hungary were called on by U.N. general assembly to answer Anglo-U.S. charges that their trials of churchmen violated peace treaties.

MAY

1 **Great Britain's** gas industry passed into public ownership, with more than 1,000 separate undertakings vested in 12 area boards.

Annihilation "en masse" of 8 nationalist armies south of the Yangtze river was claimed by Chinese Communists.

2 **Rules** to govern "fair income" rent increases under the Housing and Rent Act of 1949 were issued by federal housing expediter Tighe E. Woods.

Relaxation of Allied control over Japanese domestic affairs was promised by Gen. Douglas MacArthur, supreme commander for the Allied powers.

Columbia university announced the award of Pulitzer prizes to Arthur Miller's play *Death of a Salesman,* Robert E. Sherwood's biography *Roosevelt and Hopkins* and James Gould Cozzens' novel *Guard of Honor.*

3 **Pres. Truman** approved retirement of Gen. Lucius D. Clay as U.S. military governor in Germany and commander of U.S. forces in Europe.

Wood labour bill containing basic features of Taft-Hartley act and supported by coalition of Republicans and southern Democrats was approved by house by vote of 217 to 203.

Leo Durocher, manager of the New York Giants, was cleared by baseball Comr. A. B. Chandler of charges of assaulting a baseball fan.

Chinese Communist troops occupied port of Hangchow southwest of Shanghai.

4 **Representatives** of U.S., Britain, France and Soviet Union, meeting in New York, N.Y., agreed to end blockade and counterblockade of Berlin and to reconvene Council of Foreign Ministers for discussion of entire German question.

House of representatives voted 212 to 209 to recommit Wood labour bill to committee.

5 **Workers** at 2 Ford Motor Co. plants walked out in dispute over alleged speed-up on assembly lines.

British Defense Minister A. V. Alexander revealed the dispatch of substantial reinforcements to crown colony of Hong Kong off south China coast.

Statute creating a Council of Europe was signed in London by representatives of 10 western European nations.

6 **Transfer** to Japan of increasing control over its foreign and domestic affairs was endorsed by U.S. state dept.

U.N. Economic Commission for Europe reported that European industrial production in 1948 exceeded 1938 level for first time since end of World War II.

Canadian provincial police ousted group of strikers who had seized town of Asbestos, Que.

7 **New cease-fire** agreed upon by Indonesian and Dutch officials provided for return of the republican regime to its former capital at Djokjakarta, Java.

B.B.C. and state dept.'s "Voice of America" merged their efforts to break through soviet jamming of their broadcasts to the U.S.S.R.

8 **Draft** of new western German constitution was adopted by the parliamentary council at Bonn.

9 **Final action** to nationalize most of Britain's iron and steel industry on May 1, 1950 was taken by house of commons.

State dept. made public wartime correspondence showing that halting of U.S. advance into Czechoslovakia at Pilsen line was a military decision without political implications.

Pres. Truman named Henry DeWolf Smyth of Princeton university and Gordon Dean to be members of U.S. Atomic Energy commission.

10 **Chinese Communist** armies driving past Shanghai were reported by nationalist official news agency to have opened attacks on Hankow and the railroad leading to Canton.

Frank Hague's 32-year rule as boss of Jersey City, N.J., was ended by victory of Freedom (fusion) ticket headed by John V. Kenny.

Western German parliamentary council selected Bonn in the British zone as the capital of the German federal republic.

11 **Israel** was admitted to the U.N. as its 59th member by 37-to-12 vote of general assembly.

Foreign Secy. Ernest Bevin told British house of commons that several commonwealth countries had agreed to give Burma aid in restoring its economy and combating rebellion.

12 **British house of commons** ratified North Atlantic treaty by vote of 333 to 6.

Berlin blockade was lifted at 12:01 A.M., Berlin time.

Far Eastern commission was advised by U.S. delegate Maj. Gen. Frank R. McCoy that the U.S. had stopped collecting reparations from Japan and would not endorse further collections.

Pres. Truman stated that he still favoured a $4,000,000,000 tax increase as well as repeal of Taft-Hartley act and re-enactment of Wagner act with minor amendments.

13 **Francis P. Matthews** of Nebraska was named secy. of the navy by Pres. Truman.

14 **Gerhart Eisler,** fugitive U.S. Communist leader, was forcibly removed from Polish liner "Batory" at Southampton, Eng., by English police.

U.N. general assembly approved convention to guarantee free international transmission of news.

City council for western sectors of Berlin was given additional powers under a new occupation statute issued by U.S., British and French authorities.

United Steelworkers of America formally demanded its 4th wage increase from more than 800 U.S. steel companies.

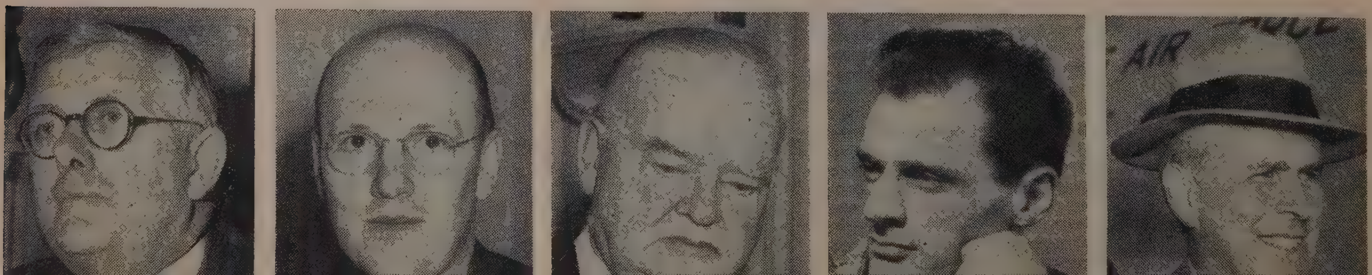
15 **Australian Prime Minister Joseph B. Chifley** stated that negotiations were proceeding for a Pacific treaty similar to the North Atlantic treaty.

16 **U.N. general assembly** refused, by vote of 26 to 15, to lift ban on diplomatic relations with Spain.

U.S. supreme court held 5 to 4 that speech is privileged under

The pictures on this page are, left to right:

EVATT	April 5
BRANNAN	April 7
HOOVER	April 11
MILLER	May 2
McCLOY	May 18



MAY—*Continued*

the U.S. constitution even if it stirs hearers to anger and unrest.

National Labor Relations board rejected in 2 cases the contention of its general counsel, Robert Denham, that it had to accept any case in which he issued a complaint.

17 **U.S. Atomic Energy commission** confirmed reports that a small amount of uranium was missing from one of its plants, but denied that it had been stolen or lost.

Franklin D. Roosevelt, Jr., candidate of the Liberal and Four Freedoms parties, won special election for house of representatives seat by overwhelming vote in New York, N.Y.

18 **John J. McCloy,** president of the International Bank for Reconstruction and Development, was named first U.S. civilian high commissioner in Germany.

U.N. general assembly adjourned after voting to postpone until its next session disposition of Italy's former African colonies.

Secy. of State Dean G. Acheson stated that the time was not appropriate for conclusion of a Pacific pact similar to North Atlantic treaty.

Gen. Eurico Gaspar Dutra, president of Brazil, arrived in Washington, D.C., on a 10-day state visit.

2 prosoviet members of house of commons were expelled from British Labour party for persistent opposition to party policy.

19 **André François-Poncet** was named France's first high commissioner in Germany.

20 **U.S. and Britain** rejected soviet suggestions for a compromise settlement of the Greek civil war.

Executive council of A.F. of L. turned down bid for reaffiliation by United Mine Workers of America.

The pictures on this page are, left to right:

VISHINSKY	May 30
CLARK	June 4
FISHBEIN	June 6
HOFFMAN	June 9
BERAN	June 19

21 **Western Berlin** railway employees working in soviet sector struck to enforce demands that they be paid in western deutschemarks.

White House revealed that Pres. Truman and Brazilian Pres. Eurico Gaspar Dutra had agreed to work out a program for economic development and social progress.

U.S. Atomic Energy commission ordered all applicants for and holders of commission fellowships to sign loyalty oaths and non-Communist affidavits.

22 **Former defense secy. James Forrestal** committed suicide by jumping from 16th floor of National Naval Medical centre at Bethesda, Md.

French national assembly approved legislation empowering colony of Cochin-China to join protectorates of Tongking and Annam to form single state of Viêt-Nam in Indo-China.

23 **British, French, soviet and U.S.** foreign ministers met in Paris to confer on the German problem.

Constitution of the Federal Republic of Germany (western Germany) took effect at midnight, German time.

24 **Soviet proposal** for reinstitution of 4-power rule in Germany was rejected by the western powers at meeting of Council of Foreign Ministers in Paris.

25 **Chinese Communist** forces entered Shanghai almost without opposition as nationalist resistance collapsed.

Harry Bridges, head of International Longshoremen's and Warehousemen's union, was indicted on charges of perjury and conspiracy for denying he was a Communist in his naturalization proceeding.

British officials in Berlin charged that new soviet restrictions on Berlin communications amounted to a breach of the agreement for lifting the Berlin blockade.

26 **House of representatives** approved by vote of 193 to 27 a compromise foreign aid appropriation bill of $5,617,470,000.

Pres. Truman signed bill modernizing the state dept.; it increased the number of asst. secretaries from 6 to 10 and redefined their duties.

27 **Gerhart Eisler** was set free by a British magistrate on ground that the U.S. offense with which he was charged was not extraditable.

U.S. navy announced withdrawal of all U.S. fleet and shore units from Tsingtao in northern China.

28 **2 U.S. citizens** were killed at the Patino tin mines in Bolivia during rioting in protest against government's arrest and deportation of union leaders and "political agitators."

29 **Ford Motor Co.** employees voted to end their 24-day strike on the basis of an arbitration agreement made by company and U.A.W. officials.

30 **Soviet Foreign Minister Andrei Y. Vishinsky** at meeting of Council of Foreign Ministers rejected western proposals for unifying Germany by extending western German constitution to all Germany.

31 **State dept.** announced that arbitrary action by local Communist authorities had forced closing of the U.S. consulate at Mukden, Manch.

U.S. and Britain formally invoked Bulgarian, Hungarian and Rumanian peace treaties to bring about enforcement of their guarantees of human rights and fundamental freedoms.

JUNE

1 **Gen. Sir Brian H. Robertson,** British military governor in Germany, was named Britain's first high commissioner in Germany.

Native Arab regime endorsed by Britain was set up by Mohammed Idris el Senussi in former Italian colony of Cyrenaica.

2 **Federal Communications commission** announced a policy change permitting radio stations to editorialize on public questions.

House of representatives approved by voice vote a bill liberalizing displaced persons legislation.

3 **Marshal Yen Hsi-shan** was confirmed as premier of nationalist China by legislative yuan.

3 of the 11 Communist leaders on trial in New York, N.Y., were committed to jail by Judge Harold R. Medina for contempt of court.

Order curbing public statements by members of the armed forces was rescinded by Defense Secy. Louis A. Johnson.

4 **Georgia Neese Clark** of Kansas was appointed treasurer of the U.S. by Pres. Truman.

5 **U.S. and Canada** announced a new commercial aviation pact which gave Canadian air lines new routes in and through the U.S. and confirmed U.S. aircraft rights at Gander, Nfd.

Baseball Comr. A. B. Chandler declared eligible for reinstatement 18 professional players who joined Mexican league in 1946.

6 **Board of trustees** of American Medical Assn. ordered retirement of Morris Fishbein, editor of *Journal* of the A.M.A., and forbade him to speak on controversial subjects.

Stock prices on New York Stock exchange dropped to the lowest level since May 1947.

69-year ban on sale of intoxicating liquors in Kansas was lifted by promulgation of liquor control law.

7 **Gordon Gray** of North Carolina was named secy. of the army by Pres. Truman.

Federal Judge Albert L. Reeves ruled that secret FBI reports introduced at trial of Judith Coplon must be read in their entirety.

8 **State dept.** announced creation of a U.S. military advisory group in Republic of Korea.

House of representatives authorized its armed forces committee to investigate charges of irregularities in U.S. air force's B-36 procurement program.

Exclusion of all Communists from employment as teachers was urged by a commission of the National Education Assn.

JUNE—*Continued*

Plan to pay dividends totalling $2,000,000,000 on national service life insurance was made public by Veterans' administration.

9 **ECA administrator Paul G. Hoffman** warned senate appropriations committee that he would resign if congress did not appropriate enough funds to run program successfully.

10 **Preston T. Tucker** and 7 associates were indicted on security act, mail fraud and conspiracy charges arising out of promotion of Tucker automobile.

Soviet demands for quick action on a German peace treaty and withdrawal of Allied occupation troops were presented to Council of Foreign Ministers by Andrei Y. Vishinsky.

11 **Czechoslovak government** announced that it had broken off trade relations with Yugoslavia.

12 **University of California,** Berkeley, Calif., disclosed that it would require faculty members and administrative officers to take non-Communist oaths.

Vassar college and Yale university each reported receipt of a gift of $2,000,000 from the Old Dominion foundation of Washington, D.C.

13 **United Mine Workers of America** began a 1-week holiday called by John L. Lewis to stabilize coal production.

Gen. Douglas MacArthur accused the Soviet Union of inciting disorder in Japan through the Communist party.

Belgian troops dispersed German workers barricading a synthetic oil plant in British zone to prevent plant's dismantlement.

Senate ratified international wheat agreement by voice vote.

14 **Berlin rail strikers** rejected a compromise proposal to end walkout which halted train traffic between Berlin and western Germany.

Bao Dai, former emperor of Annam, proclaimed himself emperor of new state of Viêt-Nam in Indo-China.

15 **Israeli Foreign Minister Moshe Sharet** reiterated Israel's refusal to readmit Arab refugees who fled Israel during hostilities in Palestine; he also asserted his country would not yield to pressure for territorial concessions.

German authorities in western Berlin were given control over almost all city government activities except those involving foreign or security questions.

16 **Congress approved** compromise bill authorizing Pres. Truman to reorganize the executive branch, subject to the veto of either house.

17 **Bill** abolishing Michigan's 1-man grand jury system was signed by Gov. G. Mennen Williams.

Pres. Truman attacked real-estate lobby's "false and misleading" propaganda against his housing bill in letter to house speaker Sam Rayburn.

18 **Rumanian legation** in Washington, D.C., was described as a Communist propaganda centre by 3 former legation members in testimony before a senate subcommittee.

19 **Hungarian government** announced arrest of Laszlo Rajk, former interior and foreign minister, on charges of spying for a foreign power.

French Indian enclave of Chandernagore near Calcutta voted to join Dominion of India.

Archbishop Josef Beran, Roman Catholic primate of Czechoslovakia, was prevented by a group of Communist hecklers from giving a sermon in his church in Prague.

20 **Council of Foreign Ministers** adjourned in Paris without reaching any agreement on Germany; general outline of treaty with Austria was approved.

Pres. Truman signed Reorganization Act of 1949 and submitted to congress his first 7 plans for reorganization of the executive branch of the government.

21 **Perle Mesta,** widely known Washington, D.C., hostess, was named minister to Luxembourg by Pres. Truman.

22 **Ezzard Charles** won world heavyweight boxing championship in bout with Jersey Joe Walcott; title was not recognized by New York state or by England.

23 **Lord Milverton,** former governor of Nigeria, resigned from British Labour party in protest against plans to nationalize the iron and steel industry.

Iran and Iraq signed a treaty of mutual aid and friendship in Tehran, Iran.

24 **Dutch troops** began withdrawal from Djokjakarta, Java, capital of the Indonesian republic.

Pres. Truman sent to congress a preliminary outline of his Point Four program of technical aid to underdeveloped areas of the world.

25 **Air forces** of members of the western European union and the U.S. began joint manoeuvres to test Britain's air defenses.

Col. Husni ez-Zaim was confirmed as president of Syria in an election in which he was the only candidate.

U.N. Special Committee on the Balkans charged that Albania and Bulgaria were continuing to give large-scale aid to Greek guerrillas.

26 **Belgium's Christian Social** (Catholic) party, favouring return of King Leopold III, failed by 2 seats to win majority in chamber of representatives in parliamentary elections.

Roman Catholic hierarchy of Czechoslovakia issued pastoral letter accusing the government of persecuting the church.

27 **Britain and Argentina** signed a 5-year bilateral trade pact in the face of U.S. opposition.

Czech government banned pastoral letters and meetings of Roman Catholic clergy not approved by government.

Liberal party headed by Prime Minister Louis St. Laurent won a sweeping victory in Canadian parliamentary elections, securing 193 out of 262 seats in house of commons.

28 **U.S.** announced it would not recognize Chinese nationalist order purporting to close Communist-held ports to foreign shipping.

Alabama governor signed bill aimed at Ku Klux Klan making it unlawful to wear hoods or masks in public.

Soft-coal operators denounced plan of John L. Lewis for United Mine Workers of America to work only 3 days a week.

Asst. Army Secy. Tracy S. Voorhees reported that Germany's industrial and financial cartel system had been effectively destroyed.

29 **Charter** detailing joint Anglo-U.S.-French civilian control of western Germany was made public.

British Royal commission vindicated present system of British press ownership and rejected any form of state control.

Last U.S. army troops left Republic of Korea, leaving a military mission to advise Korea's army.

House of representatives approved Pres. Truman's public housing and slum clearance bill by vote of 228 to 185.

30 **Senate** adopted by vote of 51 to 42 a bill modifying the Taft-Hartley act but preserving its essential features.

Dept. of justice instituted an antitrust suit to dissolve the du Pont industrial empire and sever its links with General Motors Corp., U.S. Rubber Co. and other companies.

Convention defining the right of workers to organize and bargain collectively was approved by general conference of International Labour organization and sent to member nations for ratification.

Alexander Diomedes became premier of Greece in succession to Themistocles Sophoulis, deceased.

JULY

1 **Judith Coplon,** former justice dept. employee, was sentenced to prison term after being found guilty by a jury of stealing U.S. government papers with intent to aid the U.S.S.R.

Secy. of the Treasury John W. Snyder reported a federal budget deficit of $1,811,000,000 for fiscal year ending June 30, 1949.

Jess Larson was named head of new General Services administration to co-ordinate federal purchasing functions in accordance with recommendations of the Hoover commission.

2 **Yugoslav** defense official revealed that members of soviet bloc had ceased shipment of arms to Yugoslavia.

3 **Czech government** revealed that peasants in Slovakia were forcibly resisting measures which government had taken against the Roman Catholic clergy.

Prime Minister Joseph B. Chifley charged that strike of coal miners was threatening disruption of Australia's economy.

Secy. of the Treasury John W. Snyder arrived in Paris on a trip to survey the financial and monetary situation of various western European nations.

Yugoslavia made public its plan to introduce the Yugoslav dinar in its zone of occupation in Trieste, incorporating that territory into its own economy.

4 **Moscow radio** reported the signature by the U.S.S.R., Czechoslovakia, Finland and Poland of interlocking 1-year agreements for the exchange of goods.

JULY—*Continued*

5 **Formation** was reported of 3 new joint soviet-Rumanian companies to control coal and metal production and the building industry in Rumania.

U.S. circuit court of appeals in New York, N.Y., directed enforcement of an order of the National Labor Relations board banning discriminatory hiring-hall practices by National Maritime Union of America in Great Lakes area.

6 **Polish government** joined Cominform blockade of Yugoslavia by suspending all trade deliveries.

Chancellor of the Exchequer Sir Stafford Cripps told house of commons that all except the most essential buying in U.S. and Canada had been suspended temporarily to protect Britain's gold and dollar reserves.

National Education Assn. voted almost unanimously to bar Communist party members from teaching positions.

Contract negotiations between U.S. Steel Corp. and United Steelworkers of America broke down when management barred any wage increase and reasserted its refusal to discuss union pension demands.

7 **John Foster Dulles** received interim appointment to U.S. senate to fill vacancy caused by resignation of Sen. Robert F. Wagner (Dem., N.Y.).

British troops began unloading ships tied up by a strike of dock workers on London water front.

8 **Jury trying Alger Hiss** on charges of perjury was dismissed after reporting its inability to agree upon a verdict.

Congress approved compromise public housing and slum clearance bill; bill provided for construction of 810,000 dwelling units in 6 yr. with aid of federal rent subsidies.

J. Donald Kingsley of the U.S. was named director-general of the International Refugee organization.

9 **Soviet authorities** closed all zonal crossings except 1 to truck traffic bound for Berlin from western Germany.

10 **Chiang Kai-shek** and Pres. Elpidio Quirino of the Republic of the Philippines met at Baguio, Phil., to discuss proposals to form a union of far eastern nations to oppose communism.

11 **King George VI** declared state of emergency, on advice of British cabinet, to enable government to cope with strike of London dock workers.

Pres. Truman abandoned his demands for higher taxes and price controls in midyear economic report to congress in which he stated that postwar inflationary conditions were abating.

12 **Major steel companies** rejected Pres. Truman's proposal to set up nonstatutory board of inquiry to consider dispute with United Steelworkers of America over reopening contract negotiations.

W. John Kenney was named chief of the ECA mission to Great Britain in succession to Thomas K. Finletter.

13 **All Roman Catholic Communist** party members and sympathizers were ordered excommunicated by the Vatican.

U.S.S.R. was accused by the U.S. of exploiting a "centrally directed campaign" of fear and disorder aimed at overthrowing the Japanese government.

Conference of British Commonwealth finance ministers met in London to consider problem of balance of payments between the sterling area and dollar countries.

14 **Chancellor of the Exchequer Sir Stafford Cripps** announced plans to cut British imports from the dollar area by 25% during 1949–50.

Sen. Robert A. Taft and Sen. Ralph E. Flanders introduced a resolution to extend the Monroe Doctrine to western Europe as an alternative to the North Atlantic pact.

15 **Pres. Truman** appointed a 3-member board to consider and make recommendations for settlement of wage and pension dispute in the steel industry under a 60-day strike truce accepted by management and union officials.

16 **Members** of the western European union announced agreement for unification of arms production and military supply services.

Army Secy. Gordon Gray suspended, Maj. Gen. Alden H. Waitt, chief of the chemical corps, and Maj. Gen. Herman Feldman, quartermaster general, pending investigation of charges of improper conduct in awarding military contracts.

Central intelligence agency advised a senate subcommittee that at least 29 representatives of foreign nations in the U.S. were high-ranking Communist officials.

17 **University of California** at Los Angeles reported development of a simple and inexpensive method for testing effectiveness of cancer treatment.

18 **Chinese Communists** announced opening of a 3-pronged attack on southern China along a 400-mi. front.

Finance ministers of British Commonwealth countries, meeting in London, announced their decision to recommend a 25% cut in purchases in the dollar area by their respective countries during 1949–50.

Assassination of Guatemala's armed forces commander touched off an abortive revolt against the government.

19 **U.S.S.R. charged Italy** with having violated the 1947 treaty of peace by joining the North Atlantic pact.

Kingdom of Laos in Indo-China was granted independence within the French union by a treaty signed in Paris.

20 **Israel and Syria** signed an armistice by which they agreed to keep their troops within their respective borders and to demilitarize contested areas.

Prime Minister Clement Attlee repudiated statement issued by national dock labour board threatening dockers with loss of benefits if they did not return to work.

Vasil Kolarov was elected prime minister of Bulgaria by national assembly in succession to Georgi Dimitrov, deceased.

Pres. Truman signed the Overtime-on-Overtime bill which eliminated in all cases inclusion of overtime pay as part of the regular rate under the Fair Labor Standards act.

21 **Senate** ratified the North Atlantic treaty by vote of 82 to 13.

British Foreign Secy. Ernest Bevin attributed nearly all difficulties arising in remodelling Germany into a democracy to former president Franklin D. Roosevelt's insistence upon a policy of unconditional surrender.

22 **British foreign office** released a translation of the forced-labour code of the R.S.F.S.R.

Francis Joseph Cardinal Spellman accused Mrs. Franklin D. Roosevelt of anti-Catholicism in opposing federal aid to parochial schools.

Otto Abetz, former German ambassador to France, was sentenced to 20 years' imprisonment as a war criminal by a French military court.

23 **Native Indonesian leaders** reached agreement in principle on the formation of United States of Indonesia to take over sovereignty from the Netherlands after a transitional period.

Soviet central statistical administration reported that industrial output in the first 6 months of 1949 was 41% above that of 1940.

Withdrawal by Yugoslavia of moral and political support from Greek Communist guerrillas, because latter had supported Cominform campaign against Yugoslavia, was announced by Foreign Minister Edvard Kardelj.

Secy. of Defense Louis A. Johnson signed last formal order making U.S. air force fully independent of the army.

24 **Chinese embassy** in New Delhi, India, reported that the Chinese nationalist mission in Lhasa, Tibet, had been expelled by Tibetan authorities.

25 **Soviet officials** in Berlin announced reopening of closed interzonal road crossing points.

Pres. Truman signed North Atlantic treaty and asked congress to appropriate $1,450,000,000 in arms aid to signers of the treaty and Turkey, Greece, Iran, Korea and Republic of the Philippines.

Law entitling unemployed veterans of World War II to $20 per week readjustment pay for maximum of 52 weeks expired.

26 **State of emergency** was declared at end in Great Britain following termination of strike of London dockers.

Hussein Sirry Pasha formed a coalition Egyptian cabinet in which the Wafd was represented for the first time since 1944.

27 **Mrs. Franklin D. Roosevelt** made public a letter to Francis Joseph Cardinal Spellman in which she denied his charge that she was anti-Catholic and insisted upon her right to speak on public questions.

French national assembly approved North Atlantic treaty after an all-night debate.

United Steelworkers of America announced decision to file non-Communist affidavits as required by Taft-Hartley act.

28 **Gen. Douglas MacArthur** ordered heavy cut in U.S. civil affairs administration staff in Japan.

Pres. Philip Murray of United Steelworkers of America presented to presidential fact-finding board demand for concessions of 30 cents an hour in

JULY—*Continued*

wages, pensions and social insurance.

Pres. Truman announced that the U.S. would explore with Britain and Canada basic questions underlying determination of long-range policy in field of atomic energy.

29 **U.S. joint chiefs of staff** left for Europe to discuss plans for collective security with representatives of North Atlantic treaty nations.

U.S. embassy in Buenos Aires, Arg., formally protested the censorship by Argentina of U.S. press dispatches and radio broadcasts.

U.N. Atomic Energy commission voted to suspend its work indefinitely because it had reached deadlock over control of atomic energy.

30 **British sloop "Amethyst,"** which was being detained by Chinese Communist forces, escaped down the Yangtze river under heavy fire.

U.N. Economic and Social council voted to ask the International Labour organization to set up a fact-finding and conciliation commission to protect trade union rights.

31 **Moscow** reported the conclusion of a 1-year trade pact between the U.S.S.R. and the Manchurian Communist regime.

AUGUST

1 **International Bank** for Reconstruction and Development granted a $12,500,000 loan to Finland.

Pres. Truman sent to congress a U.S. Atomic Energy commission report indicating that new and more effective atomic weapons were in production.

Pres. Truman announced that Atty. Gen. Tom C. Clark had accepted appointment as U.S. supreme court justice and that Sen. J. Howard McGrath had agreed to become attorney general.

2 **House of representatives,** by vote of 356 to 7, gave final congressional approval to bill placing national military establishment under the executive control of secy. of defense as the dept. of national defense.

3 **Formal cease-fire orders** were issued to both Dutch and native republican forces, in Indonesia, to take effect at midnight Aug. 10 in Java and at midnight Aug. 14 in Sumatra.

People of New Zealand approved institution of compulsory military training by a large majority in national referendum.

Council of Europe came into official existence with the deposit in London of the required 7 ratifications.

4 **Guy G. Gabrielson** of New Jersey was elected chairman of the Republican national committee.

Comptroller Gen. Lindsay C. Warren reported to congress that a sampling of war contract settlements had revealed overpayment of more than $11,500,000 to contractors through waste and fraud.

Prime Minister Tito declared that Yugoslavia was prepared to defend its territorial integrity against any invaders, including the U.S.S.R.

5 **State dept.** charged in comprehensive White Paper that the Chinese nationalist regime was on the verge of collapse solely because of the military, political and economic incapacity of its leaders.

Pres. Truman promoted Asst. Army Secy. Tracy S. Voorhees to post of undersecy. and named Archibald S. Alexander to post of asst. secy.

Central Ecuador was devastated by earthquake which caused heavy damage and casualties.

6 **Hawaii's legislature** completed action on, and governor signed, bill authorizing the governor to seize and operate docks closed by strike of longshoremen.

Maj. Gen. Maxwell D. Taylor was named to succeed Brig. Gen. Frank L. Howley as U.S. commandant in Berlin.

7 **Chinese nationalist** government condemned trade pact between U.S.S.R. and Communist Manchuria as a violation of the Sino-soviet treaty of 1945.

8 **Greece, Iceland and Turkey** were approved for admission to Council of Europe at first meeting of council's Committee of Ministers.

U.N. Secy.-Gen. Trygve Lie noted in his annual report a lessening of war fears and progress toward a more peaceful world.

Senate subcommittee began open hearings on charges of influence selling in the letting of government contracts by Washington, D.C., commission agents ("5 per centers").

India and the Himalayan kingdom of Bhutan signed a treaty of perpetual peace and friendship which placed Bhutan's external relations under Indian supervision.

9 **Pres. Elpidio Quirino** of the Republic of the Philippines in address to U.S. senate urged formation of a Pacific union to curb spread of communism.

White House asked certain government agencies to award contracts where feasible in 9 areas where 12% or more of the labour force was unemployed.

10 **Christian Social** leader Gaston Eyskens formed a coalition Christian Social-Liberal cabinet to break 6-week political stalemate in Belgium.

First session of Consultative assembly of the Council of Europe opened in Strasbourg, France.

11 **Pres. Truman** named Gen. Omar N. Bradley to new position of chairman of U.S. joint chiefs of staff; Adm. Louis E. Denfeld was named for 2nd 2-year term as chief of naval operations.

Paul-Henri Spaak of Belgium was unanimously elected president of Consultative assembly of the Council of Europe.

60-naiton diplomatic conference in session at Geneva, Switz., adopted 4 new conventions with respect to treatment of wounded at sea and on land, treatment of prisoners of war and protection of civilians in occupied territory.

U.N. Security council relieved Ralph J. Bunche as acting mediator in Palestine and ordered Israel and the Arab states to keep their armistices in effect pending a permanent settlement.

12 **Gen. J. Lawton Collins** was appointed U.S. army chief of staff and Gen. Thomas T. Handy was named commander in chief of U.S. forces in Europe.

Moscow radio broadcasted text of soviet note charging Yugoslavia with allying itself to the capitalist bloc and behaving as an enemy of the U.S.S.R.

13 **Maj. Gen. Harry H. Vaughan,** military aide to Pres. Truman, denied that he had acted improperly in accepting gifts of deepfreeze units in 1945 from a Chicago, Ill., perfume manufacturer.

14 **Government** of Pres. Husni ez-Zaim of Syria was overthrown by a group of army leaders; ez-Zaim was summarily tried and executed.

Conservative Christian Democratic union party won plurality in balloting for lower house of Federal Republic of Germany; Communists won only 15 seats.

15 **Army leaders** in Syria turned over control of government to an interim civilian cabinet headed by Hashem Bey Atassi.

16 **Senate** rejected by vote of 60 to 32 a reorganization plan of Pres. Truman to convert Federal Security agency into an executive department of welfare.

Record deep-sea dive of 4,500 ft. was made by Otis Barton in a benthoscope in the Pacific ocean off southern California coast.

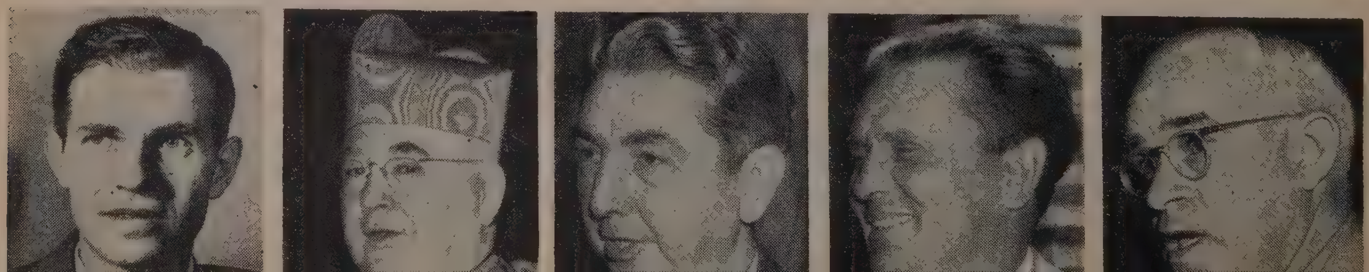
17 **Congress** approved a resolution authorizing temporary expenditures by government agencies pending passage of permanent appropriations bills.

Letter was made public in which Archbishop Josef Beran charged that he was being deprived of all personal freedom and rights as an archbishop by the Czech Communist regime.

Dept. of commerce revealed that it had approved purchase of

The pictures on this page are, left to right:

HISS........................July 8
SPELLMAN..................July 22
CLARK......................Aug. 1
TITO.........................Aug. 4
BRADLEY...................Aug. 11



AUGUST—*Continued*

a U.S. steel-finishing mill by Yugoslavia.

Chinese nationalist sources admitted capture by Communist troops of important southeastern port of Foochow.

18 **Hungary's** national assembly approved a new soviet-type constitution declaring Hungary to be a people's republic of workers and working peasants.

House of representatives passed by vote of 238 to 122 a reduced foreign military assistance bill authorizing appropriation of only $869,505,000 in the 1950 fiscal year.

19 **Federal Communications commission** voted 3 to 1 to ban broadcasting of radio and television give-away programs.

British government rejected as inadequate the suggested allocation to Britain of $840,000,000 in ERP aid in the fiscal year 1950.

Finnish army units were alerted to forestall the spread of a threatened nation-wide strike.

20 **British Secy. of State for War Emanuel Shinwell** assailed U.S. critics of the Labour regime's economic policies; attack was accompanied by British press campaign in similar vein.

Moscow radio made public text of soviet note threatening more effective measures against Yugoslavia if alleged persecution of soviet citizens did not cease.

21 **Yugoslavia** formally accused the U.S.S.R. of having sold out Yugoslav claims in Carinthia in order to further its own purposes.

22 **Pres. Truman** urged immediate congressional approval of his proposal to give arms aid to friendly foreign nations in speech before annual convention of Veterans of Foreign Wars.

23 **First Vice-Pres. Daniel Chanis, Jr.,** was sworn in as acting president of Panamá upon the death of Pres. Domingo Díaz Arosemena.

24 **Pres. Truman** proclaimed the North Atlantic treaty to be in effect following deposit by France of the last required instrument of ratification.

William M. Boyle, Jr., of Missouri was elected to succeed J. Howard McGrath as chairman of the Democratic national committee.

Cedric Worth, special asst. to the asst. secy. of the navy for air, admitted that he was the author of anonymous charges which precipitated congressional inquiry into the B-36 bomber procurement program.

Gen. Mark Clark was named to succeed Gen. Jacob L. Devers as chief of army field forces upon the latter's retirement.

Defense Secy. Louis A. Johnson ordered dismissal of 135,000 civilian employees in defense dept. and deactivation of 51 installations by June 30, 1950.

25 **U.N. Special Committee on the Balkans** reported that Yugoslav aid to Greek guerrillas had diminished and might have ceased; continued aid by Albania and Bulgaria was reported.

House of representatives began series of 3-day recesses made necessary by senate's slowness in considering appropriations bills passed by house.

House armed services committee cleared all government officials connected with B-36 bomber procurement program.

26 **Hungary** rejected U.S. proposal to join a commission to investigate alleged violation by Hungary of human rights clauses of its peace treaty.

27 **Seizure** of provincial capital of Santa Cruz by rebel forces was reported by Bolivian government.

28 **6 Civil War veterans** met at Indianapolis, Ind., for the 83rd and last encampment of the Grand Army of the Republic.

29 **Senate** passed $14,800,000,000 appropriation bill for the defense dept.; move to direct 5%–10% cut in budget estimates failed to obtain required ⅔ majority.

30 **Czech government** reported discovery and frustration of a plot for its overthrow with the aid of an unnamed western power.

Presidential fact-finding board withdrew its offer to mediate union-management dispute in steel industry after management officials insisted that mediation must be on a company rather than an industry basis.

31 **Council of the Organization for European Economic Cooperation** approved revised figures for the division of ERP aid in fiscal year 1950.

General council of the British Trades Union congress urged in special report that workers continue to accept government's policy against wage increases.

Secy. of State Dean G. Acheson reported that Pres. Truman had sent messages to the prime ministers of India and Pakistan urging them to accept proposals of the U.N. Commission for India and Pakistan for settlement of truce in Jammu and Kashmir.

SEPTEMBER

1 **Pres. Truman** said that he had no intention of yielding to congressional and newspaper demands for resignation of Maj. Gen. Harry H. Vaughan, his military aide.

2 **Gen. Douglas MacArthur** asserted that the Japanese people had earned the right to a formal peace treaty, in a statement issued on 4th anniversary of Japan's surrender.

State dept. accused the U.S.S.R. of refusing to make any real concessions, except at the expense of Yugoslavia, in negotiations for an Austrian peace treaty.

Yugoslavia announced cancellation of its agreements with the U.S.S.R. for joint enterprises in Danube shipping and civil aviation in the Balkans.

Government of Union of South Africa published a citizenship law making no provision for common status for citizens of nations in British Commonwealth of Nations.

3 **Pope Pius XII** deplored the situation of the Roman Catholic church in Poland in letter to Polish hierarchy made public in Rome.

Chinese Communist forces were reported to have captured Sining, capital of the northwestern province of Tsinghai.

4 **Britain's Brabazon I,** an 8-engined 130-ton plane described as the world's largest civil land plane, made its first flight.

5 **King Abdullah** of Jordan arrived at Corunna, Spain, on a state visit to Gen. Francisco Franco.

6 **Adm. Soemu Toyoda,** former chief of the Japanese naval general staff, was acquitted of war crimes charges by an Allied military tribunal in Tokyo.

13 persons were shot to death without apparent provocation in Camden, N.J., by Howard B. Unruh, a World War II veteran.

7 **Parliament** of the Federal Republic of Germany held its first session at Bonn.

Conference of U.S., British and Canadian finance ministers convened at Washington, D.C., to consider means of alleviating Britain's dollar shortage.

Application of Himalayan kingdom of Nepal for membership in the U.N. was vetoed by soviet delegate Semyon K. Tsarapkin.

Australian Prime Minister Joseph B. Chifley told house of representatives of plans to make an additional gift of £A10,000,000 (about $32,240,000) to Britain.

8 **Export-Import Bank of Washington** authorized a loan of $20,000,000 to Yugoslavia for industrial rehabilitation.

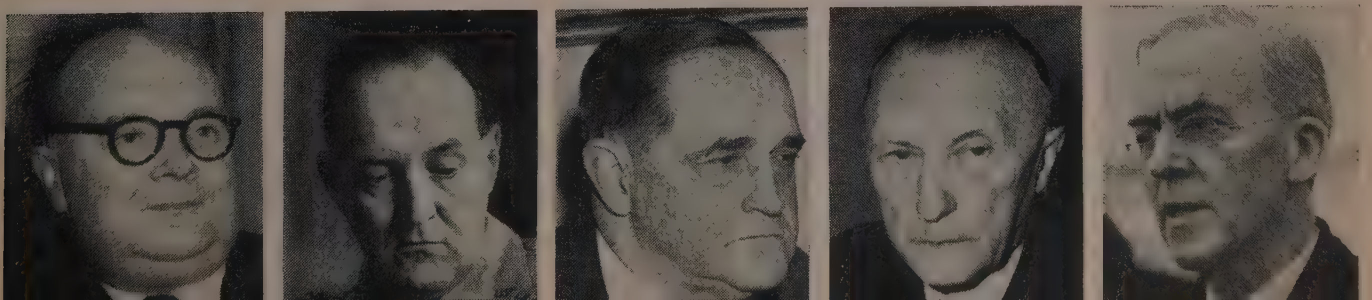
Finnish Premier Karl A. Fagerholm announced that Communist-inspired wave of strikes had completely failed in its object of overthrowing the government.

9 **All train service** on the Missouri Pacific lines was halted by a strike of 5,200 operating employees.

10 **Presidential fact-finding board** recommended that United Steelworkers of America withdraw their wage demands and that the steel industry agree

The pictures on this page are, left to right:

SPAAK	Aug. 11
VAUGHAN	Aug. 13
MINTON	Sept. 15
ADENAUER	Sept. 15
CRIPPS	Sept. 18



SEPTEMBER—*Continued*

to a modified pension and social insurance program costing about 10 cents per hour per worker.

Army Secy. Gordon Gray restored Maj. Gen. Herman Feldman to duty as quartermaster general and accepted Maj. Gen. Alden H. Waitt's request for retirement as chief of chemical corps.

11 **Federico Chaves** was named provisional president of Paraguay to succeed Felipe Molas López.

12 **Theodor Heuss,** leader of the Free Democratic party, was elected first president of the Federal Republic of Germany by federal assembly.

United Steelworkers of America joined major steel companies in accepting Pres. Truman's proposal for an 11-day strike truce.

U.S., Canada and Britain, at conclusion of conference in Washington, D.C., announced agreement on a program to enable the sterling area to attain a paying basis by 1952.

13 **Austria,** Ceylon, Finland, Ireland, Italy, Jordan and Portugal were prevented from becoming members of the U.N. by soviet vetoes in Security council.

U.N. Conciliation Commission for Palestine proposed full and permanent control of Jerusalem by the U.N. in a draft statute submitted to general assembly.

14 **Major steel companies** rejected union proposals for noncontributory pension plan in the steel industry as recommended by presidential board.

Pres. Truman nominated Stanton Griffis as U.S. ambassador to Argentina and John S. Cooper to replace John Foster Dulles on U.S. delegation to U.N. general assembly.

15 **Judge Sherman Minton** of the U.S. circuit court of appeals in Chicago, Ill., was named an associate justice of the U.S. supreme court to succeed Wiley B. Rutledge, deceased.

U.S. dept. of justice filed a civil antitrust suit seeking to split Great Atlantic & Pacific Tea Co. grocery chain into 7 independent chains.

Konrad Adenauer, Christian Democratic union leader, was elected first chancellor of Federal Republic of Germany by a bare majority of the bundestag.

16 **Senate** rejected nomination of Carl A. Ilgenfritz as chairman of the munitions board by vote of 40 to 28.

John L. Lewis revealed that payments from United Mine Workers of America's welfare and retirement fund had been suspended because of a drop in revenue.

17 **Foreign ministers** of the 12 North Atlantic treaty nations, constituting the council, voted to establish defense and military committees to carry out the security provisions of the treaty.

120 persons died in fire which swept cruise ship "Noronic" moored to pier at Toronto, Can.

18 **Acting soviet Foreign Minister Andrei A. Gromyko** agreed to accept Anglo-U.S.-French proposal for resumption of negotiations for conclusion of Austrian treaty.

International Typographical union members voted to end 22-month strike against 5 Chicago daily newspapers and to accept new contract.

Devaluation of British pound sterling from $4.03 to $2.80 was announced by Chancellor of the Exchequer Sir Stafford Cripps.

19 **Production** of both hard and soft coal was halted by a nation-wide walkout of United Mine Workers of America in dispute over pension and welfare fund.

Presidential fact-finding board rejected union demands that a second fireman be employed in multiple-unit diesel-electric locomotive operations.

Maj. Gen. George P. Hays was named deputy U.S. high commissioner in Germany and Benjamin J. Buttenwieser became asst. high commissioner.

20 **Brig. Gen. Carlos P. Romulo** of the Republic of the Philippines was elected president of the 4th session of the U.N. general assembly, meeting at Lake Success, N.Y.

21 **Formation** of People's Republic of China was announced in Peiping by Communist leader Mao Tse-tung.

Military government in western Germany was formally superseded by Allied High commission, which proclaimed coming into force of Occupation statute granting large measure of self-government to Federal Republic of Germany.

22 **Senate** approved without reduction the $1,314,010,000 bill for arms aid to friendly foreign nations.

United Steelworkers of America joined major steel companies in accepting Pres. Truman's request to extend the strike truce in the steel industry another 6 days.

Gen. George C. Marshall was named by Pres. Truman to succeed Basil O'Connor as president of the American Red Cross.

23 **Pres. Truman** announced that the U.S. had evidence that an atomic explosion occurred in the U.S.S.R. within recent weeks.

24 **Laszlo Rajk,** onetime prominent Communist official, and 2 codefendants were sentenced to death in Budapest, Hung., on charges of plotting the overthrow of the government.

26 **Pres. Truman** signed Trade Agreements Extension Act of 1949 authorizing him to continue to reduce U.S. tariffs in return for similar concessions by other nations.

27 **U.S.S.R.** agreed, after 2 yr. of negotiation, to return to the U.S. 30 ships obtained during World War II under lend-lease.

House of representatives approved and sent to White House Career Compensation bill providing increased pay and allowances for all active and reserve members of U.S. uniformed forces.

Chinese delegate T. F. Tsiang filed complaint with U.N. general assembly accusing the U.S.S.R. of threatening China's independence and territorial integrity.

28 **Britain and Czechoslovakia** signed a 5-year trade agreement.

House and senate approved a conference bill providing full authorization of $1,314,010,000 for arms aid to friendly foreign nations.

Peking radio announced that the large western province of Sinkiang had severed relations with the Chinese nationalists and had adhered to the Communist regime.

U.S., British and French commandants broke off negotiations for unification of Berlin when soviet representative failed to attend meeting on dispute over wages for railroad workers.

29 **British Labour government** received 342–to–5 vote of confidence on devaluation issue in house of commons after censure motion was defeated, 350 to 212.

Ford Motor Co. and United Automobile Workers (C.I.O.) agreed on contract providing for company-financed pension plan costing about 8¾ cents per hour per employee.

Text was published of note in which the U.S.S.R. denounced its 1945 treaty of friendship and mutual aid with Yugoslavia.

Mrs. Iva Toguri D'Aquino was found guilty by federal jury of charge of broadcasting for Japan as "Tokyo Rose" during World War II.

Both houses of congress approved by voice vote a $5,809,990,000 appropriation bill for foreign economic aid; $4,852,380,000 was earmarked for ERP.

30 **Allied air lift** to Berlin was officially terminated with 277,264th flight.

Poland and Hungary denounced their treaties of friendship and mutual aid with Yugoslavia.

Mao Tse-tung, chairman of Chinese Communist party central committee, was elected chairman of People's Political Consultative Conference of People's Republic of China.

OCTOBER

1 **Nation-wide steel strike** began at 12:01 A.M., E.S.T., after failure of last-minute efforts to reach agreement.

People's Republic of China was formally proclaimed by Communist authorities in Peking under premiership of Chou En-lai.

Creation of Federal Republic of Germany was attacked as violation of existing agreements in soviet notes to the U.S., Britain and France.

2 **U.S.S.R.** announced recognition of People's Republic of China and termination of diplomatic relations with nationalist China.

New York Yankees and Brooklyn Dodgers won American and National league flags, respectively, on last day of season.

4 **U.S. high commissioner John J. McCloy** directed his staff to check any renewal of naziism and anti-Semitism in western Germany.

5 **House of representatives** approved by vote of 333 to 14 a bill extending federal social security coverage to 11,000,000 additional persons and increasing benefits an average of 70%.

Defense committee of North Atlantic treaty nations announced creation of military committee headed by Gen. Omar N. Bradley to commence strategic planning for defense of North Atlantic area.

House armed services committee voted to conduct a far-reaching inquiry into current status of defense unification.

6 **Resignation of Henri Queuille** as premier of

OCTOBER—*Continued*

France was accepted by Pres. Vincent Auriol.

British Minister of Health Aneurin Bevan stated that Britain's national health service was costing approximately £300,000,000 ($840,000,000) a year.

159-day Hawaiian longshoremen's strike was settled in Honolulu on basis of immediate 14-cent an hour wage increase and 7-cent increase in March 1950.

7 **German Democratic Republic** was proclaimed in the soviet zone of Germany.

Senate rejected by vote of 45 to 26 a move to freeze farm price supports at 90% of parity.

8 **Western and eastern German** trade officials signed agreement for exchange of goods valued at $112,816,000 during 9-month period ending June 30, 1950.

9 **31 nations** released new customs tariff schedules incorporating cuts agreed upon in conference at Annecy, France.

New York Yankees won their 12th world series, defeating Brooklyn Dodgers 4 games to 1.

10 **U.S.S.R.** transferred to German Democratic Republic (eastern Germany) all administrative functions previously the responsibility of soviet military authorities.

Pres. Truman signed bill authorizing him to assign up to 1,000 troops and U.S. military equipment to the U.N. for noncombat assignments.

11 **Indian Prime Minister Jawaharlal Nehru** arrived in Washington, D.C., for 3-week visit to the U.S.

Wilhelm Pieck was elected president of German Democratic Republic.

Asst. Secy. of State Ernest A. Gross was named to newly authorized post of deputy U.S. representative at the U.N.

12 **Joint congressional atomic energy committee** cleared chairman David E. Lilienthal and U.S. Atomic Energy commission of charges of mismanagement.

Otto Grotewohl was elected minister-president (premier) of German Democratic Republic; all key cabinet posts went to veteran Communists.

Lord Boyd-Orr, former director-general of the Food and Agriculture Organization of the U.N., was awarded the Nobel peace prize for 1949 by Norwegian storting.

Mrs. Eugenie Anderson of Minnesota was nominated by Pres. Truman to be U.S. ambassador to Denmark, the first woman to be given such a diplomatic rank.

13 **British Prime Minister Clement Attlee** announced that he would not call a general election in 1949.

Senate voted 53 to 15 to reject nomination of Leland Olds to a 3rd term on the Federal Power commission.

Adm. Louis E. Denfeld, chief of naval operations, told house armed services committee that U.S. navy was being dangerously weakened by uninformed high-command decisions.

14 **Jules Moch** was elected premier of France by national assembly, receiving 311 votes, 1 above the constitutional minimum.

John L. Lewis urged in letter to A.F. of L. Pres. William Green that 9 A.F. of L. unions join with United Mine Workers of America to give financial aid to striking steelworkers.

11 top U.S. Communist leaders were found guilty by federal jury in New York, N.Y., of conspiring to teach and advocate the overthrow of the U.S. government by force.

Congress completed action on bill raising salaries of cabinet members and other officials and heads of government agencies.

Czech national assembly approved 2 laws making all churches administratively and financially dependent upon the state.

15 **Chinese Communist forces** occupied the abandoned nationalist capital of Canton in south China.

Pres. Truman nominated 19 new federal judges, including Virgin Islands Gov. William H. Hastie, the first Negro to be named to a U.S. circuit court of appeals.

Laszlo Rajk, onetime leading Hungarian Communist, was hanged for treason.

Senate voted 36 to 30 to return to committee a house-approved bill liberalizing displaced persons legislation.

16 **Greek Communist radio** announced that Greek guerrilla forces had ceased military operations but would not disband.

Georgi M. Pushkin, prominent soviet diplomat, was named chief of the soviet diplomatic mission to German Democratic Republic.

17 **Jules Moch** resigned as premier of France after failing to form a cabinet.

Chinese Communist forces won the large southeast China port of Amoy and consolidated their control of China's coastline from Korea to Hong Kong.

18 **House and senate** approved a compromise defense appropriation of $15,585,863,498 for fiscal year 1950, including provision for the 58-group air force demanded by the house.

Soviet Foreign Minister Andrei Y. Vishinsky told a press conference that the U.S.S.R. had had atomic bomb since 1947.

19 **Congress** adjourned *sine die* after approving overwhelmingly a compromise farm price support bill.

Senate confirmed Mon C. Wallgren of Washington as a federal power commissioner and James M. Mead of New York as a member of the Federal Trade commission.

Pres. Truman accepted the resignation of Edwin G. Nourse as chairman of his council of economic advisers.

Trials of Japanese war criminals by Allied military tribunals were completed in Tokyo.

Gen. Omar N. Bradley, chairman of joint chiefs of staff, severely criticized high naval officers in testimony on the unification controversy before house armed services committee.

20 **French national assembly** elected René Mayer as premier.

Ecuador, India and Yugoslavia, the latter over vehement soviet protest, were elected members of the U.N. Security council by the general assembly.

21 **Federal judge Harold R. Medina** fined each of the 11 convicted Communist leaders $10,000 and sentenced 10 of them to 5 years' imprisonment and 1 to 3 years' imprisonment.

Amtorg Trading Corp., soviet purchasing agency in the U.S., and 6 of its officers were indicted by a federal grand jury for failure to register as foreign agents.

23 **René Mayer** resigned as premier of France after making a futile effort to reach agreement with the Socialists on a cabinet.

24 **44-day strike** of operating employees of Missouri Pacific lines ended after agreement to arbitrate unsettled union grievances was reached.

Permanent U.N. headquarters site in New York, N.Y., was dedicated; Pres. Truman was principal speaker.

Prime Minister Clement Attlee proposed cuts in food subsidies, national defense and health and other welfare services amounting to £250,000,000 to alleviate Britain's economic crisis.

25 **U.S.S.R.** requested Yugoslavia to recall its ambassador in Moscow on ground that he was engaged in espionage activities against the U.S.S.R.

26 **Pres. Truman** signed the Fair Labor Standards Amendments of 1949 which raised the legal minimum wage from 40 cents to 75 cents per hour and reduced coverage slightly.

27 **Asst. Secy. of State George V. Allen** was named U.S. ambassador to Yugoslavia by Pres. Truman.

Adm. Louis E. Denfeld was removed from his post as chief of naval operations by order of Pres. Truman.

1949 Nobel prize for medicine went to 2 brain specialists, Walter R. Hess of Switzerland and Antonio Egas Moniz of Portugal.

28 **Pres. Truman** signed bill providing pay increases and simplified compensation schedules for classified civil service employees.

National Labor Relations board ruled unanimously that the International Typographical union had violated closed-shop ban of Taft-Hartley act by trying to force employers to discriminate against nonunion workers.

Georges Bidault, Popular Republican leader, was elected premier of France.

29 **Chinese Communist authorities** were reported to have arrested Angus Ward, U.S. consul general, and 4 aides in Mukden, Manch.

Pres. Truman signed defense appropriation bill for fiscal year 1950 but ordered impounded the $615,000,000 appropriated to increase size of U.S. air force from 48 combat groups recommended in budget estimates to 58.

30 **Defense dept.** announced the removal of 77 vessels, including 35 combat ships, from active service for reasons of economy.

31 **Bethlehem Steel Co.** and the United Steelworkers of America signed an agreement providing for the continuation, with increased benefits, of the company-financed pension plan

OCTOBER—*Continued*

and for a jointly financed welfare plan.

NOVEMBER

1 **White House** announced the appointment of Vice-Adm. Forrest P. Sherman, commander of the 6th task fleet, as chief of naval operations.

National convention of the C.I.O. approved constitutional amendment barring Communists, fascists and members of other totalitarian groups from the C.I.O. executive board.

2 **Dutch and Indonesian leaders** signed a pact at The Hague providing for the unconditional and irrevocable transfer of sovereignty over Indonesia to the Republic of the United States of Indonesia.

United Electrical, Radio and Machine Workers of America and the United Farm Equipment and Metal Workers of America were expelled from the C.I.O. on the ground that they were Communist dominated.

3 **U.S. circuit court of appeals** in New York, N.Y., ordered release of the 11 convicted Communist leaders from jail on $260,000 bail, pending hearing of appeal.

Pres. Truman accepted the resignation of Karl T. Compton as chairman of the research and development board in the defense dept.

1949 Nobel prize for chemistry was awarded to William F. Giauque of the University of California, Berkeley; physics prize went to Hideki Yukawa of Kyoto university, Japan.

4 **Federal Republic of Germany** and the Saar were recommended for admission as associate members to the Council of Europe by the council's Committee of Ministers.

Pres. Truman approved the appointment of Ely E. Palmer to succeed Paul A. Porter as U.S. representative on the U.N. Conciliation Commission for Palestine.

U.S. dept. of commerce announced more stringent controls on export of strategic goods to forestall their reshipment to the U.S.S.R. and eastern Europe.

7 **Board of directors of General Motors Corp.** voted a record U.S. cash dividend of $190,232,055 to 436,005 stockholders.

U.S. supreme court ruled that Negro workers could sue railroads and railroad unions for alleged discrimination in employment.

Soviet Marshal Konstantin K. Rokossovsky was named minister of defense in the Polish cabinet and marshal of the Polish armies.

Economic Cooperation administration announced the lifting of suspension of Marshall plan aid to Indonesia.

8 **William O'Dwyer** was re-elected mayor of New York, N.Y., on the Democratic ticket; Herbert H. Lehman defeated John Foster Dulles in race for N.Y. seat in senate.

Republic Steel Corp., 3rd largest U.S. steel producer, signed pension and welfare agreement with United Steelworkers of America similar to that signed by Bethlehem Steel Co.

Elpidio Quirino was re-elected president of the Republic of the Philippines.

France and the Indo-Chinese kingdom of Cambodia signed a treaty in Paris confirming Cambodia's status as an independent state within the French union.

9 **John L. Lewis,** president of the United Mine Workers of America, ordered soft-coal miners to return to work without a contract until midnight Nov. 30.

Pres. Mariano Ospina Pérez declared a state of siege in Colombia in an effort to quell political disturbances.

10 **Secy. of the Interior Julius A. Krug** submitted his resignation to Pres. Truman.

Soviet Foreign Minister Andrei Y. Vishinsky asserted that atomic energy was being used in the U.S.S.R. to raze mountains and irrigate deserts and for other peaceful purposes.

Yugoslavia was excluded from all offices on the soviet-dominated Danube river control commission organized in Galati, Rum.

11 **Pres. Truman** promoted Undersecy. of the Interior Oscar L. Chapman of Colorado to post of secretary.

Nation-wide strike in the steel industry was virtually terminated by conclusion of pension and welfare agreement, similar to the Bethlehem agreement, between U.S. Steel Corp. and the United Steelworkers of America.

Foreign ministers of the U.S., Britain and France announced in Paris that they had instructed their high commissioners in Germany to give the Federal Republic of Germany wider discretion in internal affairs.

Maxwell M. Hamilton was named to succeed Maj. Gen. Frank R. McCoy as U.S. representative on Far Eastern commission.

12 **Yugoslavia** denounced its treaty of mutual aid and friendship with Albania.

Soviet Foreign Minister Andrei Y. Vishinsky told a U.N. committee that the U.S.S.R. would allow inspectors of the proposed atomic energy control agency to enter the U.S.S.R. for periodic checks.

13 **Prime Minister Antonio de Oliveira Salazar's** National Union party won all 120 seats in Portuguese national assembly elections.

14 **Eastern railroads** were awarded a 12.5% increase in passenger fares, 3rd postwar increase, by the Interstate Commerce commission.

Central committee of Polish Communist party expelled 3 onetime leaders, including Wladyslaw Gomulka, former vice-premier, on charges of nationalistic deviation from the Communist line.

15 **Chinese nationalist warship** blockading the port of Shanghai shelled and damaged a U.S. merchant ship leaving the port.

German Chancellor Konrad Adenauer announced that the U.S., Britain and France had decided that there should be no further dismantling of German plants for reparations.

Peking radio reported that the Communist regime had sent a message to U.N. officials challenging the right of the nationalist government to represent China in the U.N.

Herbert J. Burgman, former clerk in the U.S. embassy in Berlin, was convicted of committing 13 overt acts of treason against the U.S. in broadcasting German propaganda during World War II.

16 **Mohammed Riza Pahlavi,** shah of Iran, arrived in Washington, D.C., for visit to Pres. Truman and tour of the U.S.

House of commons approved amended bill for nationalization of the British steel industry which postponed the vesting date until Jan. 1, 1951.

17 **Burma and Pakistan** were admitted to membership in the Far Eastern commission.

Atomic Energy commission chairman David E. Lilienthal warned that recent atomic explosion in the U.S.S.R. made dispersion of U.S. government and industrial facilities more imperative.

18 **Vice-Pres. Alben W. Barkley** and Mrs. Carleton S. Hadley were married at St. Louis, Mo.

Grounding of all B-29s which had not undergone engine modernization was ordered by U.S. air force following crash of 4th B-29 in 3-day period.

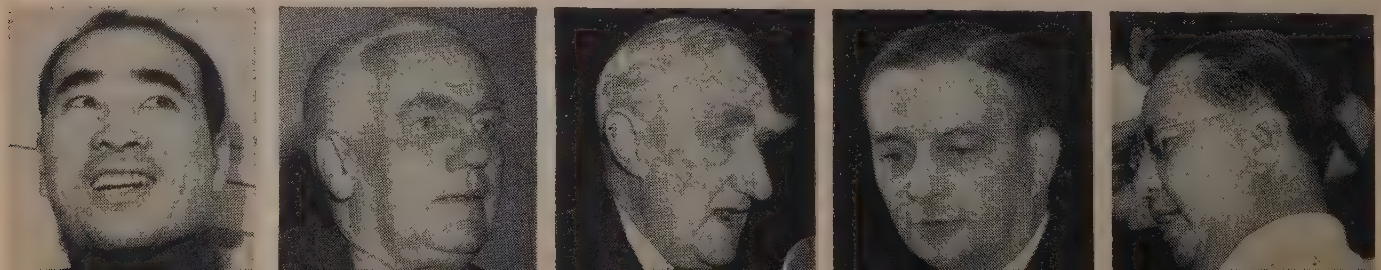
U.N. general assembly approved resolution requesting member nations to halt arms shipments to Albania and Bulgaria until those countries ceased giving aid to Greek guerrillas.

North Atlantic council created a financial and economic committee to keep military planning in line with budgetary plans and economic goals of member nations.

19 **American Legion** demanded use of U.S. troops to compel release of U.S. consul general Angus Ward, held by Chinese Communists.

The pictures on this page are, left to right:

CHOU	Oct. 1
PIECK	Oct. 11
BOYD-ORR	Oct. 12
BIDAULT	Oct. 28
QUIRINO	Nov. 8



NOVEMBER—*Continued*

20 **Vice-Pres. Roberto F. Chiari** was sworn in as president of Panamá after national police forced the resignation of Pres. Daniel Chanis, Jr.

21 **American Telephone and Telegraph Co.** announced that it had voluntarily increased to $100 a month the minimum pension for all workers retiring at 65 after 20 yr. of service in the Bell system.

U.N. general assembly approved compromise resolution giving independence to Libya by Jan. 1, 1952, and to Italian Somaliland after 10 yr. as a U.N. trust territory; decision on Eritrea was deferred pending investigation.

Secy. of State Dean G. Acheson announced that the U.S. had requested 30 nations, including the U.S.S.R., to join in concerted action against the imprisonment of consul general Angus Ward by the Chinese Communists.

22 **U.N. general assembly** voted to request Security council to reconsider for membership 9 nations barred by soviet vetoes.

Agreement lifting many industrial and diplomatic restrictions on the Federal Republic of Germany was initialled at Bonn by Chancellor Konrad Adenauer and the U.S., British and French high commissioners.

23 **State dept.** announced that Angus Ward and 4 aides had been released by Chinese Communist authorities and ordered to leave the country.

U.N. Food and Agriculture organization elected Israel, Indonesia and Korea to membership but barred Spain.

David E. Lilienthal's resignation as chairman of the Atomic Energy commission, effective Dec. 31, was announced.

Soviet Foreign Minister Andrei Y. Vishinsky told U.N. general assembly that the U.S.S.R. no longer recognized the right of the Chinese nationalists to represent China in the U.N.

24 **Panaman national police** installed former president Arnulfo Arias Madrid as president of Panamá.

British house of lords gave final legislative approval to bill providing for nationalization of iron and steel industry, effective Jan. 1, 1951.

25 **Hubert E. Howard,** Chicago coal company official, was named chairman of the munitions board by Pres. Truman.

Proposal for internationalization of Jerusalem was rejected by Israeli Foreign Minister Moshe Sharet.

26 **Jordan** followed Israel in rejecting plan for internationalization of Jerusalem.

Constituent assembly of India gave final approval to constitution providing for the transformation of India into a sovereign democratic republic.

27 **Conservative Laureano Gómez** was chosen president of Colombia in an election boycotted by the Liberal party.

28 **Chungking,** erstwhile capital of nationalist China, was abandoned by nationalist forces in the face of approaching Communist troops.

29 **Cominform** issued communiqué calling for the overthrow of Marshal Tito's regime in Yugoslavia and the suppression of "Titoism" in other nations.

30 **Labour (Socialist) party** lost its 14-year control of New Zealand's house of representatives in election which returned 46 National party members and 34 Labour members.

DECEMBER

1 **John L. Lewis** ordered 480,000 members of the United Mine Workers of America to work only 3 days a week until individual operators signed new contracts.

Defense ministers of the 12 North Atlantic treaty nations unanimously agreed upon basic defense and armament policies at meeting in Paris.

Hector McNeil, British minister of state, told U.N. general assembly that Britain would not give the U.N. information on political conditions in British colonies.

U.N. general assembly adopted by vote of 53 to 5 a soviet-opposed resolution calling on member nations to observe U.N. charter and their treaties as the best guarantee of peace.

2 **Federal Housing administration** announced that federal financing would be refused to any new housing projects discriminating against occupants because of race, creed or colour.

3 **Inter-Allied Reparations agency** decided to divide among its member nations dismantled German industrial equipment originally intended for shipment to the U.S.S.R.

State dept. made public a note to the Chinese nationalist government warning it to cease immediately its attacks on U.S. merchant ships.

4 **Roman Catholic bishops** of Czechoslovakia warned the government that they would not submit to any church control law that destroyed religious freedom, it was revealed.

5 **House un-American activities committee** was told that uranium and atomic bomb data had been flown to the U.S.S.R. in 1943 and 1944 on the order of Harry L. Hopkins.

6 **U.N. general assembly** voted to ask International Court of Justice to advise it whether the U.N., the Union of South Africa or some 3rd party had sovereignty over South-West Africa.

7 **International Confederation of Free Trade Unions** was formed in London by world labour groups as rival to Communist-dominated World Federation of Trade Unions.

8 **Chinese nationalist regime** moved its capital from Chengtu in western China to Taipei, Formosa.

U.N. general assembly called upon all nations to respect China's territorial integrity and to forgo special privileges there.

House of delegates of American Medical Assn. voted to levy $25 annual assessment on all members to fight Pres. Truman's national health insurance plan.

9 **Chancellor Konrad Adenauer** of the Federal Republic of Germany urged that Germans be included in any military force formed by the western Allies against the U.S.S.R.

U.N. general assembly voted 38 to 14 to make Jerusalem an international enclave under the administration of the U.N. Trusteeship council.

10 Russian émigrés charged with wartime collaboration with Germany and espionage for the soviet intelligence service were given prison terms by Yugoslav court.

10 **4th session** of U.N. general assembly adjourned at Lake Success, N.Y., after approving record U.N. budget of $49,641,773.

Australian Labour party was voted out of power in parliamentary election which gave opposition coalition 73 out of 121 seats in house of representatives.

11 **North Korean authorities** released 2 U.S. merchant marine officials attached to Economic Cooperation administration whom they had detained for 11 weeks.

12 **U.S. supreme court** unanimously upheld the constitutionality of the Housing and Rent act of 1949.

13 **Israeli knesset hagdola** (parliament) voted to complete the immediate transfer to Jerusalem of all government departments except the defense and foreign ministries.

U.N. Security council resolution commending the Dutch-Indonesian agreement creating the U.S. of Indonesia was twice vetoed by soviet delegate Semyon K. Tsarapkin.

14 **Former Bulgarian vice-premier Traicho Kostov** and 10 codefendants were found guilty of charges of treason; Kostov was sentenced to death.

Provisional constitution of the Republic of the U.S. of Indonesia was signed at Batavia, Java, by representatives of the 16 constituent states and territories.

15 **U.S. Steel Corp.** announced price increases av-

The pictures on this page are, left to right:

PAHLAVI	Nov. 16
LILIENTHAL	Nov. 23
SOEKARNO	Dec. 16
MENZIES	Dec. 19
EINSTEIN	Dec. 26

DECEMBER—*Continued*

eraging $4 per ton to meet increases in production costs which included employee pension and welfare programs.

Agreement making Federal Republic of Germany a full participant in the European Recovery program was signed at Bonn.

International Court of Justice ruled that Albania must pay Britain £843,947 in damages for mining 2 British destroyers in the Corfu channel in 1946.

16 **Chinese Communist leader Mao Tse-tung** arrived in Moscow for consultations with soviet Premier Stalin.

Achmed Soekarno, president of the Indonesian republic since 1945, was elected president of the Republic of the U.S. of Indonesia by electors of the constituent states.

17 **State dept.** warned all U.S. shipping companies and ships at sea that Shanghai was a danger zone and extremely hazardous to shipping.

18 **Mohammed Hatta,** premier of the Indonesian republic, was appointed premier of the Republic of the U.S. of Indonesia by Pres. Achmed Soekarno.

19 **Defense dept.** announced that the U.S., Britain and Canada had agreed on a plan for standardizing all military weapons except the atomic bomb

Nazi Field Marshal Erich von Manstein was found guilty of war crimes by British military court and sentenced to 18 years' imprisonment.

Australian coalition cabinet headed by Robert Gordon Menzies replaced Labour cabinet headed by Joseph B. Chifley.

1949-50 edition of *Jane's Fighting Ships* published in London reported that the U.S.S.R. was attempting to build up a fleet of 1,000 submarines.

20 **U.N. Trusteeship council** voted to ask Israel to remove ministries and government departments recently transferred from Tel Aviv to Jerusalem and to explain its defiance of U.N. internationalization plan.

U.S. demanded the release of Robert A. Vogeler, a U.S. citizen held incommunicado by Hungarian authorities, and barred further travel in Hungary by U.S. citizens.

21 **70th birthday** of soviet Premier Stalin was marked by elaborate celebrations in the U.S.S.R. and in nations in the soviet sphere of influence.

Secy. of State Dean G. Acheson reported that substantially full agreement had been reached by the North Atlantic treaty nations on the weapons to be supplied them by the U.S. under the Mutual Defense Assistance Act of 1949.

22 **Japanese government** asserted that it was not bound by the Yalta pact and hence had legal claims to Okinawa, Iwo, the Bonin Islands and parts of the Kuriles and Sakhalin.

23 **State dept.** warned U.S. ship captains that they might forfeit their masters' licences by trying to run the Chinese nationalist blockade of Chinese ports.

Polish military court convicted 6 persons, including 4 French citizens, on charges of spying for the French intelligence service.

British foreign office announced suspension of trade negotiations with Hungary following latter's refusal to permit access to British subject under arrest in Budapest.

24 **Hungary** rejected U.S. demand for the release of Robert A. Vogeler, a U.S. businessman arrested on charges of alleged espionage and economic sabotage.

Yugoslavia and the U.S. signed agreement permitting U.S. civil aeroplanes to use Yugoslav fields and to fly over Yugoslavia en route to other countries.

25 **Argentine government** climaxed oppressive campaign against opposition newspapers by barring publication of a provincial paper opposed to the Juan D. Perón regime.

26 **Yugoslavia and Britain** signed a 5-year trade agreement providing for the exchange of goods valued at $616,000,000.

Egyptian government warned that it would take a positive attitude against any Arab state that threatened the independence of another Arab state.

Albert Einstein was reported to have evolved a generalized theory of gravitation interrelating all known physical phenomena into a single intellectual concept.

27 **Queen Juliana** of the Netherlands transferred sovereignty over Indonesia to the Republic of the U.S. of Indonesia in ceremony at Amsterdam.

28 **U.S. extended** *de jure* recognition to the Republic of the U.S. of Indonesia and Pres. Truman named H. Merle Cochran to be U.S. ambassador to the new nation.

Southern coal operators filed unfair labour practice charges against the United Mine Workers of America and requested National Labor Relations board to seek court injunction against 3-day work week.

French Premier Georges Bidault received votes of confidence of 305 to 287 and 306 to 288 from national assembly on 2 tax increase measures.

Hungarian government ordered the nationalization of all businesses still in private hands or financed by foreign capital, including many U.S. and British firms.

30 **Chinese Communist regime** was accorded recognition by India.

Northern and midwestern soft-coal operators filed unfair labour practice charges against the United Mine Workers of America.

State of Viêt-Nam in Indo-China was granted a large measure of internal sovereignty by France under terms of agreement signed in Saigon, Indo-China.

31 **Israel** rejected request by U.N. Trusteeship council for removal of Israeli government offices from Jerusalem.

Moscow announced that 12 former Japanese army officers had been sentenced by soviet military court in Siberia on charges of engaging in bacterial warfare during World War II.

Gen. Douglas MacArthur told Japanese people in annual New Year's message that they had not renounced their inalienable right of self-defense against unprovoked attack.

BOOK OF THE YEAR

Abdullah ibn Hussein (1882–), king of the Hashemite Kingdom of Jordan, was born in Mecca, the second son of King Hussein of Hejaz. He joined his father in exile in Istanbul in 1893 and was a member of the Ottoman parliament. His father's unauthorized assumption of the title of "King of the Arab Countries" was not viewed with favour by Ibn Sa'ud, king of Nejd, and the estrangement between the two rulers resulted in a territorial dispute on the Hejaz-Nejd border. In May 1919 the Hejaz forces under Abdullah were annihilated by Ibn-Sa'ud's army. In March 1921, when Trans-Jordan was separated from Palestine, Abdullah was offered the rule of the new country as emir under British mandate. On May 25, 1946, he was crowned sovereign king of the Hashemite Kingdom of Trans-Jordan. In the summer of 1948, King Abdullah declared war against the state of Israel, but his British-trained army failed to justify its reputation.

On Aug. 7, 1949, at the conclusion of a 12-day visit by King Abdullah to Iran, it was announced that the two countries had signed an agreement providing for collaboration in international problems. Shortly afterward, while on a visit to Great Britain, Abdullah declared to the correspondent of the Cairo newspaper *El Misri* that the creation of a Greater Syria, uniting Syria, Iraq, Jordan and Arab Palestine under a Hashemite king, was an obvious necessity. On Sept. 5 he visited Spain for ten days.

Abyssinia: *see* ETHIOPIA.

Academy of Arts and Letters, American: *see* SOCIETIES AND ASSOCIATIONS.

Academy of Political and Social Science, American: *see* SOCIETIES AND ASSOCIATIONS.

Accident Insurance: *see* INSURANCE.

Accidents. Accidents caused 98,000 deaths in the United States in 1948. This total was exceeded only by deaths from heart disease, cancer and cerebral haemorrhage. Information available through Oct. 1949 indicated that the 1949 accidental death total would probably drop 5% below that of 1948. In addition to the deaths, accidents in 1948 also caused about 10,000,000 nonfatal injuries.

Organized efforts to reduce accidents in the United States are spearheaded by the National Safety council and affiliated local safety councils throughout the nation. Safety work is constantly carried on by industries and by a large number of organizations, both governmental and private, operating in their various spheres of activity, such as industry, traffic, the school, the home, the farm, etc.

Serving as a place for group planning and execution by all who take part in the safety movement, the National Safety council attempts to discover the facts of accident occurrence, to devise or help devise engineering, educational and enforcement measures for prevention; assists in determining engineering requirements for the safe design, construction and use of machines and equipment; helps formulate model safety legislation; participates in planning and executing training and educational programs; disseminates this information widely to interested groups and to the general public; and encourages and assists the establishment and functioning of community and state safety organizations.

Industrial Safety.—Building on approximately 40 years of experience in preventing work accidents, the country's progressive industries continued to pursue thoroughgoing safety measures in 1949, recognizing accident prevention as an important element in efficient operation.

Trade associations and other employer groups emphasized accident prevention programs in their meetings and publications. Labour organizations recognized accident prevention efforts as an important element in serving their members. Governmental agencies, such as state and national labour departments, also carried on safety programs as important parts of their operations.

Look BOTH WAYS BEFORE CROSSING
PLAY AWAY FROM TRAFFIC
Look!

PRIZE WINNERS in the 1949 National Traffic Safety poster contest sponsored by the American Automobile association and open to elementary and high school students throughout the U.S.

An industrial safety highlight of 1949 was the president's conference on industrial safety in March, at which 1,500 representatives of management, labour, government and the public met in Washington, D.C., to consider committee reports and develop plans for the reduction of the industrial accident toll.

It appeared, late in 1949, that the year's toll of occupational accident fatalities might be reduced by as much as 6% from the 1948 toll of 16,500.

Traffic Safety.—As the year 1949 drew to a close, it appeared that the number of traffic accident deaths might drop 500 below the 1948 figure of 32,000. This apparent reduction was in the face of an approximate 6% increase in motor vehicle travel.

Various professional, industrial, insurance and other groups continued in 1949 their programs of education, enforcement and engineering in the traffic safety field.

In June 1949 the president's highway safety conference met for the third time in Washington, with about 3,000 of the nation's traffic safety leaders in attendance. Committee reports from previous conferences were brought up to date, and plans made for a more intensive application of the action program, as agreed on at previous meetings of this conference.

In the 1948 National Traffic Safety contest, which takes account of good traffic safety records, as well as sound programs in all phases of traffic safety, Massachusetts received the grand award among states, and Washington, D.C., among cities. Massachusetts also received top place among states in the 1948 Pedestrian Protection contest; Washington, D.C., was the winner in cities of more than 50,000 population; and Peru, Ind., among cities of less than 50,000. Awards for outstanding performance in traffic law enforcement in 1948 were granted, among the states, to Connecticut, Pennsylvania, Oklahoma, Texas, Minnesota and Colorado. City winners, in various population groups, were: Washington, D.C.; Portland, Ore.; Grand Rapids, Mich.; Pasadena, Calif.; Plainfield, N.J.; and Longview, Wash.

Farm Safety.—In 1949, 23 states had State Farm Safety committees, and 11 states had a full-time farm safety specialist, working through many public and private agencies to spread information on the seriousness of the farm accident problem, and ways and means of meeting it.

The president of the United States, for the sixth successive year, proclaimed a National Farm Safety week, in July 1949, which brought attention to the problem of rural accidents. More than 1,100,000 pieces of educational material were distributed, and radio, newspaper and magazine support was outstanding.

School and Child Safety.—Among children 1 to 14 years of age accidents are responsible for more deaths than the next six death causes combined. Even so, the accidental death rate among children under 14 had dropped about 40% in the last 40 years.

School authorities showed increasing recognition during 1949 of the importance of safety education, in the classroom, in shops and in other parts of the school program.

A specialized feature of school safety work had been the driver training programs instituted in many high schools throughout the nation. Studies had shown that students who had had this training were involved in fewer accidents than those who had not.

Home Safety.—The 1948 toll of deaths in home accidents was 35,000, which was greater than in any other type of accident. Ten months' reports for 1949 indicated that home fatalities would again lead the list, although a reduction of about 6% from 1948 appeared likely.

Activity in home safety during 1949 consisted in large part of improved and expanded safety education of people generally, both through the general media of public information and through specific instructional material. In the latter field, a special kit of home safety materials was produced and made available for use in many communities.

Local and state health departments gave increased attention to accident prevention work, concentrating on home safety. Women's clubs and other organizations and agencies attracting the support and interest of homemakers showed an increasing tendency to include safety in the home as a regular program activity.

Community and State Safety Organizations.—Community and state safety organizations served in their respective areas to provide leadership in a co-operative effort among all groups and individuals working together for the conduct of safety activities. Control of accidents in any community involves the joint efforts of traffic enforcement and engineering authorities, public information media of various kinds, industry, labour, service groups and many others. It is the function of the local safety council to harmonize and co-ordinate these and other safety activities.

During 1949 about 50 out of the several hundred local and state safety organizations throughout the country qualified for acceptance as chapters of the National Safety council, this relationship signifying that these organizations fully represented the National Safety council in the communities in which they operated, at the same time retaining their own autonomy.

Safety Meetings.—The 37th National Safety congress was held in Chicago, Ill., in Oct. 1949 with an attendance of approximately 10,000. In addition, about 30 regional safety conferences were held during the year. These meetings brought about an exchange of information, plans and programs among leaders in all fields of safety. (R. L. Fo.)

Canada.—Provincial highway accident trends and safety measures of 1949 included: Quebec—a superior court ruling made it clear that a green light gave a permissive right, not an absolute right, to proceed; new legislation suspended for three months the licences of guilty accident-involved or drunken or reckless drivers; the government issued simplified forms to facilitate compulsory accident reports; Ontario—although extended daylight-saving time gave longer daylight driving hours during the autumn months, and although the highways department conducted a vigorous educational campaign, traffic deaths were up 17% for the first ten months of 1949 (1948: 574; 1949: 671); 83.3% of highway fatalities were being caused by drivers 18 to 24 years old; Saskatchewan—tests on the province's first portable safety lane revealed that 80% of the province's cars were unsafe; British Columbia—compulsory driving tests every five years for all motorists were inaugurated.

Canada's industrial accident fatalities during the first half of 1949 stood at 518, with transportation, manufacturing and logging persisting as the most contributory industries.

Following the S.S. "Noronic" fire disaster, federal transport authorities examined shipping laws to see if they could be amended to promote greater safety in Canadian waters, but no action was taken by the end of the year. (C. Cy.)

Great Britain.—*Road Safety.*—The principal road safety activity during 1949 was the organization of a National Pedestrian Crossing week from April 3 to 9, the aim being to focus the attention of all classes of road users on proper observance and use of crossings. Local authorities were asked by the ministry of transport to co-operate, and 1,100 of them did so.

The National Safety congress was held in London from Oct. 4 to 7 and was attended by 1,000 local authority delegates; a conference of road safety organizers from all over the country was also held in Harrogate, Yorkshire, during May.

Two hundred thousand drivers entered the National Safe Driving competition of the Royal Society for the Prevention of Accidents.

Industrial Accident Prevention.—A National Industrial Safety conference held in Scarborough, Yorkshire, in May was attended by 450 industrial delegates. Regional industrial safety conferences were held in many provincial towns. Firms in Sheffield, Rotherham, Barnsley, Doncaster and Chesterfield, covering about 200,000 workers, co-operated in a Good Housekeeping week to draw attention to accidents due to untidiness in work.

The chief inspector of factories' report for 1947 was published early in 1949. It showed that more than 83% of all injuries reported were due to causes other than machinery.

The ministry of education published a pamphlet, *Safety Precautions in Schools,* explaining ways in which risks could be avoided in physical education, the laboratory, manual and handicraft work.

Home Accident Prevention.—During the year the registrar general's review for 1946 was issued and revealed that 7,883 deaths occurred in the home and everyday pursuits, a slight decrease from previous years. The campaign against home accidents was intensified by a grant made to the Royal Society for the Prevention of Accidents by the home office for the provision of lectures, posters and leaflets for this purpose. (*See* also Death Statistics; Disasters; Industrial Health.)

Films of 1949.—*The Safest Way* (American Automobile Association); *Wheel Sense* (Association Films); *You're Driving 90 Horses* (Bell Telephone). (H. I. S.)

Acheson, Dean Gooderham (1893–), U.S. secretary of state, was born on April 11 in Middletown, Conn., attended the Groton school, was graduated from Yale in 1915 and from Harvard law school in 1918. After serving in the navy in World War I he was for two years private secretary to Louis Brandeis, associate justice of the U.S. supreme court. He then engaged in law practice, and in 1933 served for six months as undersecretary of the treasury. In 1941 he became assistant secretary of state and was undersecretary of state from Aug. 16, 1945, to June 30, 1947. He was chairman of the commission of the secretary of state that wrote the Acheson-Lilienthal report on international control of atomic energy. On Jan. 7, 1949, Pres. Harry S. Truman appointed him secretary of state to succeed George C. Marshall, who resigned. Acheson was sworn in on Jan. 21.

He strongly supported the entry of the United States into the North Atlantic alliance. He was vice-chairman of the (Hoover) Commission on Organization of the Executive Branch of the Government, and put some of its proposals into effect in the state department. He attended the meeting of the Big Four foreign ministers which took place in Paris, May 23 to June 20, and which came to several agreements concerning Germany and Austria, among them one confirming the ending of the Russian blockade of Berlin. Acheson supported President Truman's program for supplying military aid to nations combating communism. He reviewed U.S. foreign policy in an address before the United Nations general assembly Sept. 21 in which he said "a small group," meaning the soviet satellites, was causing unrest and that Russia was blocking effective U.N. control of atomic energy and disarmament.

ACTH: *see* Allergy; Arthritis; Chemistry; Chemotherapy; Endocrinology; Heart and Heart Diseases; Medicine.

Aden. British colony and protectorates on the southern coast of Arabia (*q.v.*). Colony area: 80 sq.mi. Pop. (1948 est.) 81,000. Protectorate area: *c.* 112,000 sq.mi. Pop. (1948 est.) 650,000, almost entirely Moslem Arabs. Governor: Sir Reginald S. Champion.

History.—Kamaran Island (22 sq.mi.) in the Red sea, administered by the government of India after capture from the Turks in 1915, was placed under the personal supervision of the governor of Aden. Rising costs necessitated the revision in 1949 of the colony's development plan; the revised plan envisaged a total expenditure of £1,063,000 from the colony's surplus balances, £300,000 from colonial development and welfare funds, and £660,000 to be raised by loan. A serious famine, which threatened the eastern protectorate in the spring, was in part relieved by supplies flown in by the royal air force.

Finance.—Currency: the Indian rupee (21 U.S. cents after devaluation in Sept. 1949). Colony's budget (1947–48): revenue Rs. 12,112,421; expenditure Rs. 9,880,631. (Jo. A. Hn.)

Adenauer, Konrad (1876–), German government official, was born at Cologne, Jan. 5. Following a university education at Freiburg-in-Breisgau, Munich and Bonn, and three years as a lawyer, he was in 1906 elected town councillor in his native city. Eleven years later he was elected *Oberbuergermeister* (lord mayor) of Cologne, an office which he held uninterruptedly for 16 years. From 1917 to 1933 he was a member of the Prussian *landtag* and in 1928–33 was its speaker. In June 1934 he was arrested and imprisoned for a short time in connection with the Röhm purge; and following the assassination attempt against Hitler on July 20, 1944, he was sent to Brauweiler concentration camp but was later released. In Feb. 1946 he was elected chairman of the Christian Democratic union in North Rhine-Westphalia, and on Sept. 1, 1948, was elected president of the parliamentary council drafting the west German constitution or basic law. On Sept. 15, 1949, after the elections to the *bundestag* (federal diet) of the new west German republic had given the C.D.U. the largest number of seats, Adenauer was appointed chancellor.

(D. A. Sn.)

Adjusted Compensation: *see* Veterans' Administration (U.S.).

Adult Education: *see* Education; Libraries.

Advertising.

In 1949, a year during which total advertising expenditures continued to increase, the most outstanding development was the swift growth of television and the successful application of advertising techniques to the new medium. The year was also marked by advertising that was more strongly competitive in its presentations, as supply began to meet demand in additional fields of commercial activity.

The rate of increase in advertising expenditures was not so great as in previous postwar years, standing at approximately 2.9%. The most important single gain was made by newspaper advertising.

The $5,400,000,000 spent in 1949 in all media was divided as shown in Table I.

Table I.—*Advertising Expenditures in the United States*
(Millions of Dollars)

	1949*	1948
Newspapers	$1,763.1	$1,749.6
Radio	612.8	596.9
Magazines	491.6	512.7
Direct mail	632.0	574.5
Trade and business papers	227.8	230.1
Outdoor	130.8	132.1
Television	60.5	—†
Farm papers	19.7	20.4
Miscellaneous	1,030.7	1,014.4
Total	$4,969.0	$4,830.7

*Preliminary estimates by Hans Zeisel, McCann-Erickson, Inc.
†No estimate for 1948.

In a study published in Sept. 1949, the National Industrial Conference board stated that advertising costs were slightly lower than in the 1935–39 period. The report estimated that the cost of a page for each 1,000 circulation of magazines was 6.5% below the 1935–39 average, the milline rate of newspapers was down 3.8%, and radio time for each thousand radio homes was 18.9% lower. Farm publication costs, on the other hand, were up 8.4%.

Problems facing advertising in 1950, as stated by various leaders, included the following: How to encourage adequate use of advertising to sell the vast volume of goods and services the economy was capable of producing; how to achieve better integration of advertising with merchandising and sales programs; how to improve measurements of advertising effectiveness; how to secure better public relations through advertising; how to set advertising appropriations and to budget more scientifically.

Both the Association of National Advertisers and the National Industrial Advertisers association were studying appropriations. The A.N.A. published an extensive bibliography on the subject, and the N.I.A.A. studied practices among 2,000 of its advertiser members. The latter survey, when completed, would list budgets by types of product for 1949, 1948 and 1939, state how appropriations were determined and how budgeted for expenditures in various media.

Two new products were introduced during the year, ammoniated dentifrices and antihistamine cold remedies, that resulted in large-space and competitive advertising. During the year the automobile manufacturers moved toward a buyer's market, with the result that their advertising increased and often featured price cuts. In Nov. 1949 the advertising of new passenger cars in newspapers, for instance, was 239% higher than in Nov. 1948.

The year 1949 closed with fair optimism among advertisers. They had passed through the recession of the spring and early summer successfully, and felt that 1950 would be a good year. The Research Institute of America found in a poll of 30,000 member firms that one-third planned to increase advertising appropriations in 1950, less than 7% to reduce them. The A.N.A. annual survey of its members did not indicate that there would be much increase in spending in 1950.

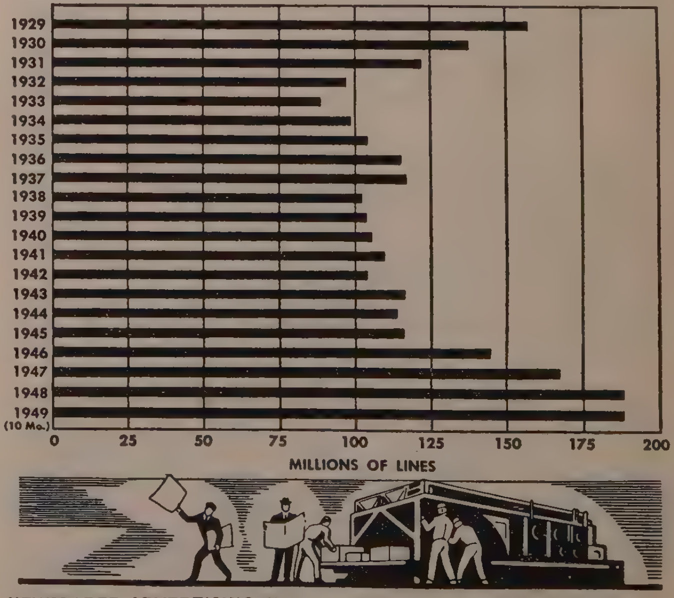
Newspapers.—Newspaper linage was approximately 2% higher in 1949 than in the year before. Media Records reported 2,094,103,004 lines for the first 11 months of the year, a gain of 1.7% over the first 11 months of 1948. The rate of increase in December was faster, so that it was expected the year would end with a gain of about 2% or more. There were continued rate increases, but it was felt that rates were reaching a plateau of some stability.

National newspaper advertising (excluding local retail advertising) fared better, being 15.9% higher during the 11-months' period than for the like months of 1948. The largest gains were made by alcoholic beverages, up 29.8%; dentifrices, up 53.7%; new passenger cars, up 83.0%. Alcoholic beverages and new passenger cars together accounted for 22.8% of all national newspaper linage during the first 11 months. Advertising of the antihistamine cold remedies was reflected in a rise of 30.3% for medical advertising in November.

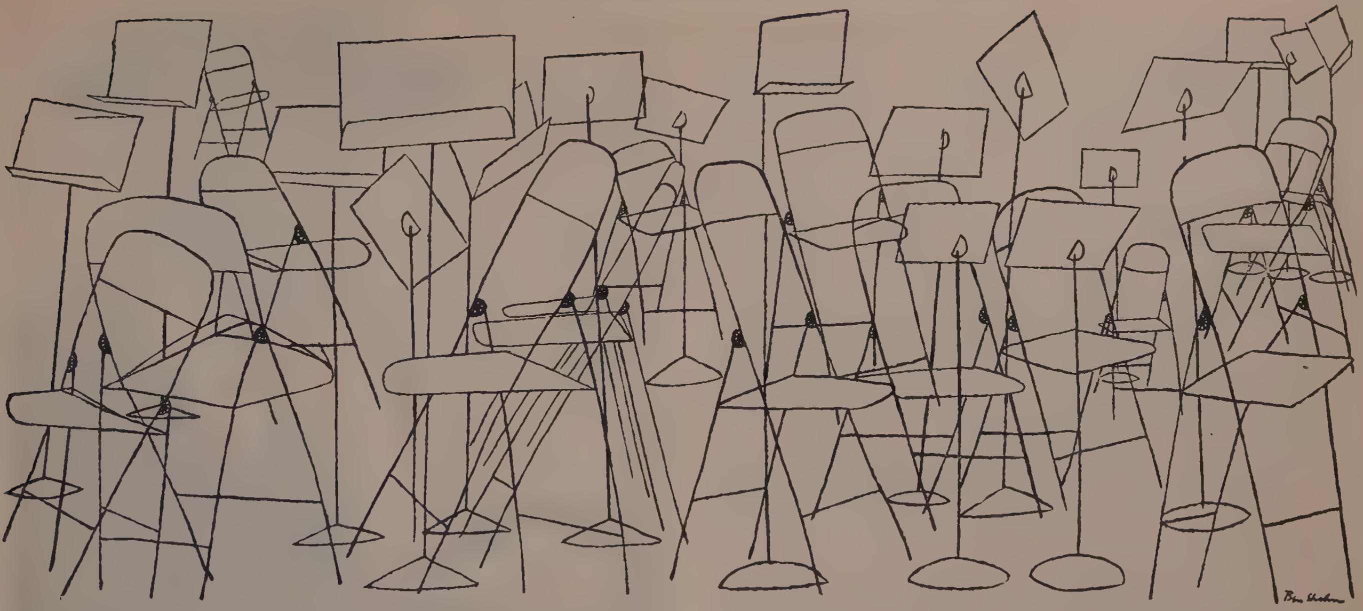
There were some important casualties among newspapers during the period. The *New York Sun* ended a career of 116 years when it was sold early in Jan. 1950 to the *New York World-Telegram*. The publisher of the *Sun* stated that the move was caused by failure of advertising revenue to keep up with rising costs of labour and newsprint. Newspaper linage figures developed by Media Records showed that whereas in 1939 the *Sun* accounted for 10.3% of all New York city newspaper linage, by 1949 that figure had dropped to 5.4%.

The *New York Star*, successor to *PM*, suspended publication in the year; its mechanical equipment was bought by a publisher who began to issue a new tabloid, the *New York Daily Compass*. The American Newspaper Advertising Network, an organization designed to sell newspaper advertising space in groups of newspapers, ended its four-year career in 1949.

Magazines.—The Magazine Advertising bureau estimated that advertising expenditures in national magazines for the first six months of 1949 were at the annual rate of $450,000,000, compared with $463,000,000 for the like period of 1948, a decrease of 2.8%. During the same period of 1949, circulation of 242 magazines stood at 142,500,000, compared with 141,100,000 for 238 magazines in the like period of 1948. Circulation of 95.8 copies per 100 persons compared with 96.6 for the first half of 1948. The reasons ascribed by the bureau for the high circulation were editorial improvements that had occurred in the past decade, an increase in the number of high school graduates in the population, and the large growth in the number of



NEWSPAPER ADVERTISING (total linage in 52 cities of the United States): average per month. Compiled by Media Records, Inc.



"NO VOICE IS HEARD NOW . . ." by Ben Shahn, an advertisement for the Columbia Broadcasting System, Inc. This drawing was exhibited at the Museum of Modern Art as part of the 1949 Art Directors club annual exhibit

consuming units in the upper-income brackets.

A breakdown of magazine newsstand outlets was also reported by the bureau. It showed that seven out of eight were retail stores. Of 99,238 outlets surveyed, 39.5% were drugstores, 23.0% confectionery stores and 14.0% groceries and delicatessens. Only 7.4% of the outlets were newsstands.

In a report on paper prices, the National Association of Magazine Publishers stated that paper costs in 1949 took one out of every four dollars the publisher spent, compared with one out of five spent 10 years before. The association stated that the profit margin of the average publisher had dropped from 6.7% in 1935–39 to 4.9%, and was still declining.

There was some mortality among magazines, just as among newspapers. *Sports Illustrated* began publication in January and discontinued six months later. B. C. Forbes' bimonthly *Nation's Heritage*, whose subscription price was $150 a year, ceased publication in December. McGraw-Hill publishing company discontinued its *Science Illustrated*. Publishers of *Look* magazine, on the other hand, put out a flourishing and small-sized weekly, *Quick*, and announced publication in 1950 of *Flair*, a monthly. (*See* also Newspapers and Magazines.)

Radio.—The National Association of Broadcasters estimated that gross income of the radio industry was up 4.5% from 1948, but that this gain was almost matched by a rise of about 4% in operating expenses. It predicted a gross income of $435,279,000 in 1949, as compared with $416,720,279 in 1948. The gross income stated was that received by stations and networks before deduction of agency commissions and after trade discounts. National network income at $129,300,000 was off 3.3%; national spot business at $118,425,000 was up 13.0%; local retail income at $180,025,000 was up 5.3%.

The year in radio was marked by competition among the networks for major advertising accounts, a competition that resulted in several switches of popular programs. The year was also noteworthy for the decline in popularity of the type of program marked by contests in which large amounts of merchandise or cash were given as prizes. The Federal Communications commission (*q.v.*) announced in the year that it intended to ban such "giveaway" programs, but was temporarily restrained by a court order obtained by a producer of syndicated radio shows.

The National Broadcasting company stressed the importance of the radio audience not in the home of the listener. It cited surveys to show that most radio listening outside the home is done in automobiles, or while the listener is at work or while he is visiting in other homes. It was estimated that as much as 12%, or some 27 minutes, of a total day's listening was outside the home. The surveys showed that listening to radio had become a personal rather than a family habit, and the company cited one survey to show that in 1949 98.6% of all homes owned radios, 54.3% with one set, 33.3% with two sets and 12.4% with three or more. (*See* also Radio.)

Television.—Television was the most exciting advertising medium during 1949, and data on its growth became inaccurate almost as soon as published. The number of television stations jumped during the year from 50 to nearly 100, the number of owners of sets from 1,000,000 to about 3,500,000, the television audience from about 4,000,000 to more than 14,000,000, the number of television advertisers from 1,000 to 2,000.

It was estimated that approximately $20,000,000 was invested in television time sales by advertisers during the year. As advertising increased, time costs approximately doubled, in New York going from an average of $1,000 an evening hour in January to $2,000 in December. In respect to television advertising rates, a study by The Broadcast Advertising bureau found little uniformity in the method of allowing agency commissions, some stations paying on time charges only, others on time plus other charges as for studio facilities, production and so on, and some making no intelligible statement.

The effect of television on other advertising media, especially radio, was debated at length during the year. The general conclusion was that television would take its place as one of the major advertising media, but that it would complement rather than displace newspapers, magazines, radio and outdoor advertising.

It was also suggested during the year that television was taking the cream off the advertising markets, concentrating in large cities and neglecting rural areas. One conclusion was that rural areas might loom larger in importance to radio. Television costs remained high; it was estimated that the cost of building a station was $400,000 and the cost of operating it $200,000 a year. The cost of television was also high for advertisers. Advertising agencies experimented widely with television, although it was said in agency circles that only one of them did so at a profit.

There were many surveys on the penetration and effectiveness of television. Daniel Starch and staff inaugurated a television commercial rating service somewhat similar to its publication advertising readership service. One of its first reports indicated that in television integrated commercials were most effective and demonstration relatively ineffective. Basing percentages on viewers who would buy the brand advertised, the integrated commercial was rated at 80%, the dramatic at 72%, cartoon and stop-motion at 63%, demonstration at 25% and service (time and weather reports) at 14%. (*See* also TELEVISION.)

Other Media.—Advertising expenditures in outdoor advertising amounted to approximately $78,000,000, according to Outdoor Advertising Inc. This was approximately the same as for 1948. Major advertisers in the medium were classified as follows: automotive, 38% of dollar volume; beverages, 29%; food, 19%; other products, 14%.

Advertising revenue of the 41 farm publications measured by Farm Publication Reports, Inc., for the first half of 1949 was $25,044,181, compared with $23,557,027 for the same period of 1948.

The outstanding trend in direct mail advertising was said to be the increasing use of metered mail. Tests on cost per order or inquiry showed that third-class meter stamps were most effective, followed by first-class meter stamps, first-class adhesive stamps, third-class printed postal permit, third-class adhesive stamps and third-class precancelled stamps.

The volume of advertising in business papers in 1949 was estimated at $215,000,000, compared with $200,500,000 in the previous year. The year was marked by a controversy between publications with paid circulations and those with controlled circulations (50% or more free). The latter contended that their circulations should be certified by the Audit Bureau of Circulations as were those of the publications with paid circulations. The papers with paid circulations opposed such a claim. Many business magazines with controlled circulations resigned from the Associated Business Publications because of the controversy.

The year saw an increase in the use of premiums in advertising, and one estimate put their value at $1,000,000,000, or double the prewar peak. Coupons redeemable in merchandise reappeared on the package of one of the largest-selling brands of cigarettes. Door-to-door selling also increased, an indication of greater competition in selling. The amount of merchandise moved by this kind of selling was estimated at about $7,000,000,000.

British Advertising.—It was estimated that British advertisers in the United States spent about $29,000,000 in U.S. media in 1948 and that the expenditure would be even greater in 1949. Approximately half this amount was spent by Lever Brothers company and Lipton.

The 17th annual Advertising conference held in England was attended by 600 persons. The theme of the conference was "The Task of Advertising in Creating National Prosperity." Delegates indicated a realization of the expanded scope of advertising and a willingness to discuss media research.

The impact of the new large space in press advertising brought an early trend toward artwork and layouts featuring bright-eyed young women and apparently influenced by American advertising. Later the editorial techniques used in newspapers began to be adopted in greater measures by advertisers, and in addition some newspapers showed willingness to make available to advertisers special positions.

Despite the postponement of the census of distribution, the whole question of distribution costs was receiving more attention. This attention was stimulated by the report of the Committee on Resale Price Maintenance. Incentive to study costs came from manufacturers, the government and from the agitation of left-wing elements which were attacking the advertised brand method of distribution as a vulnerable aspect of capitalism.

ADVERTISEMENT for The Watchmakers of Switzerland published in *Advertising Agency* magazine as one of the 50 best of 1949 on the basis of layout, art and typography

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Aeronautics: *see* AVIATION, CIVIL; AVIATION, MILITARY.

Afghanistan. An independent kingdom in the centre of Asia, Afghanistan is bounded to the N. by the U.S.S.R., to the W. by Iran, to the S. and S.E. by Pakistan and to the E. by China (Sinkiang). Area: *c.* 270,000 sq.mi. Pop. (1948 est.): 12,000,000. Religion: Moslem. Languages: Pashtu and Persian. Chief towns (pop. 1946 est.): Kabul (cap. 206,200); Kandahar (77,200); Herat (75,600); Mazar-i-Sharif (41,900). King, Mohammed Zahir Shah; prime minister, Sardar Shah Mahmud.

History.—The cold war between Afghanistan and Pakistan continued during 1949. Political circles in Kabul and the Afghan government insisted that Pakistan should constitute the North West Frontier province as an independent Pathan republic, or at least allow the Pathans of the tribal areas on the Pakistan side of the Durand line to opt for Kabul. The British government categorically refused the Afghan request that it should intervene. The press and wireless of Kabul continued to pour out propaganda against Pakistan. The Pakistan government refrained from reprisals and trade between the two countries went on as before; in fact economic co-operation was offered.

The country was in the grip of an economic crisis. The Persian lamb trade, a vital element in Afghan finance, was languishing; Indian import duties paralyzed the export of fruit. A U.S. firm had been carrying out important work on roads, bridges and irrigation dams for two or three years. Work was later held up because of dwindling Afghan credit, but was to be resumed on the strength of a $21,000,000 loan granted by the Export-Import Bank of Washington on Nov. 24. (W. Bn.)

Education.—(1948 est.) Primary schools 400, secondary schools 25, higher schools (*lycées*) 7, and a university at Kabul.

Finance.—The monetary unit is the *afghani*, which under exchange rates existing in Nov. 1949 was worth 5.96 cents U.S.

Transport and Communications.—There are eight main roads totalling 2,265 mi. Licensed motor vehicles (Dec. 1948): cars 770, commercial vehicles 2,070. There are no railways.

A. F. of L.: *see* Labour Unions.

Africa: *see* British East Africa; British South African Protectorates; British West Africa; French Union; Italian Colonial Empire; Portuguese Colonial Empire; South Africa, The Union of; Spanish Colonial Empire; Trust Territories; etc.

Agricultural and Industrial Chemistry, Bureau of: *see* Agricultural Research Administration.

Agricultural Research Administration.

The Agricultural Research administration, established in 1941, directs and co-ordinates most of the scientific research in the U.S. department of agriculture. The administration comprises seven research agencies. It also operates a 12,000-ac. research centre at Beltsville, Md., and administers the Research and Marketing act. Close co-operation is maintained with the state agricultural experiment stations and other research organizations.

Some examples of the results of ARA research in 1949 follow:

Gelsoy, a versatile new protein product obtained from soybeans, was developed at the northern regional research laboratory, one of the four large regional laboratories operated by the bureau of agricultural and industrial chemistry. This product was developed by spray drying the water extract of alcohol-washed soybean flakes from which the oil had been recovered with hexane. Gelsoy, the first gelable vegetable-protein material discovered, promised usefulness as a remoistening glue, cork line sealer in metal bottle caps, foaming agent, and in food products such as ice creams, gelled foods and meringues.

A red-green dye technique developed at the southern laboratory to distinguish between mature and immature cotton attracted world-wide interest. Brokers used the test to aid them in channelling cottons into uses for which they were best suited, thus forestalling processing difficulties at cotton mills. The mills employed the test to check the uniformity of blends of immature cotton fibre and to detect bales containing too many thin-walled fibres, which might cause "neppiness" or spottiness in yarns and fabrics. The differential-dyeing technique was also adopted by cotton breeders for variety-development work.

Allyl starch, a product of the eastern laboratory, was further improved as a base material for protective coatings, printing inks, linoleum and other plastic compositions. The laboratory found that a better product could be obtained by copolymerizing allyl starch with styrene, a chemical used in the manufacture of synthetic rubber. This development increases the resistance of allyl-starch coatings to certain solvents, alkalies and boiling water and was expected to enhance the usefulness of allyl starch and to facilitate its further commercialization.

Studies at the western laboratory to improve methods of processing fruits and vegetables showed that indirect immersion freezing is a safe as well as a speedy and economical method of food preservation. This process is several times as fast as conventional air-blast package freezing and appreciably faster than the more expensive plate-freezing method. In indirect immersion freezing, food products are packed in hermetically sealed containers and then immersed in a refrigerated liquid until frozen.

In the bureau of animal industry's co-operation with the Mexican government to eradicate foot-and-mouth disease in Mexico, vaccination of uninfected animals was undertaken to help starve out the virus. The first round of vaccinations within the quarantine zone was completed in July 1949, and additional vaccinations were started immediately. The first vaccination covered more than 13,000,000 cattle, sheep and goats. Although susceptible animals had contracted foot-and-mouth disease after one vaccination, there was no record in 1949 of such an infection after the second or third vaccination with currently available vaccines.

Through the bovine brucellosis control program, 469 counties in 21 states had been accredited as brucellosis-free, with less than 1% of cattle infected.

Breeding work with cattle, hogs, sheep and chickens showed that crossbreds have better qualities for efficient production than purebreds. Tests with beef cattle indicated that offspring would largely inherit the sire's rate and efficiency of weight gain while on feed. With this knowledge, cattle producers could predict the future performance of their herds from records made by the herd sire before breeding age.

A new-type, high-temperature, short-time milk heater was developed by the bureau of dairy industry and used successfully in the laboratory to improve certain characteristics of both evaporated milk and sweetened condensed milk. When the milk is forewarmed at a higher temperature for a shorter time than is usually done, the canned product is better able to withstand the heat of sterilization and, therefore, stabilizing salts can be omitted or reduced in amount. A similar treatment for sweetened condensed milk retards thickening of the product during storage. Commercial companies were making plans to manufacture this heater.

Experiments showed that a five-year crop-and-pasture rotation would yield more roughage and total digestible nutrients than permanent pastures. In the rotation, corn was grown for silage the first year, wheat the second year, followed by three years of pasture and hay crops. The five-year average for the rotation system was 11% higher than the average for the permanent pasture.

Milk composition studies showed milk and nonfat milk products to be rich sources of the newly discovered vitamin B_{12}. Other laboratory research resulted in improvement in quality of American cheddar cheese, application of the phosphatase test to goat's milk to determine the adequacy of pasteurization, two new tests for determining lipolytic activity in milk and improvement in keeping quality of dried milk by packaging it with carbon dioxide. Methods were developed for utilizing sweet-cream buttermilk in the manufacture of ice cream and for the use of whey in sherbets.

Culminating 15 years of intensive studies, pyrethrinlike esters almost identical to portions of the insect-killing principle in pyrethrum were produced in the chemical laboratory of the bureau of entomology and plant quarantine. One compound was as toxic to houseflies as the natural ingredient derived from pyrethrum flowers. It has the same desirable knock-down action and remains stable in storage for longer periods. It was thought that this might prove to be the first step in the development of a synthetic substitute for the imported plant material, so important in the control of certain kinds of insect pests.

A practical method of treating cotton bags with chemicals to make them insect-repellent was developed co-operatively by the bureaus of entomology and plant quarantine and agricultural and industrial chemistry. Pyrethrins, or a mixture of pyrethrins and piperonyl butoxide, were applied to warp yarns during the usual sizing treatment preparatory to weaving. Treated bags were found to protect cereal products for seven months or more. It was thought that this new treatment might prove of great value in conserving flour and other cereal products, especially in warm countries.

Farmers and dairymen were advised in the spring of 1949 not to use DDT for insect control on dairy cows or in dairy barns. Studies showed that small quantities of DDT appear in milk of cows treated with this insecticide. Sometimes DDT can be detected in milk following its ordinary use in dairy barns for fly control. Methoxychlor and pyrethrum insecticides were recommended for use on dairy cows and lindane for use in dairy barns and milk rooms.

A two-year study of the breakfast meal, with adult women as subjects, was completed by the bureau of human nutrition and home economics. An important observation in this study was that a sense of well-being was consistently reported following the breakfasts that provided the larger quantities of protein-rich foods. The study also showed that a high-protein lunch will not take the place of a low-protein breakfast in promoting the sense of well-being during the afternoon.

Facts and figures showing what city families were eating were published in a series of reports of a nation-wide study begun in 1948. This study is showing the influence of geographic location, season of the year, income and family size on household use of food. It provides marketing facts of value to farmers, food processors and tradesmen and nutrition information of value to home economists and social workers.

New crop plants released by the bureau of plant industry, soils and agricultural engineering included, among others, three new varieties of Chinese chestnuts, new tung nut varieties, new disease-resistant beans, a new head lettuce named Progress, for the east, and a new yellow tomato named Sunray. Other developments in the fruit and vegetable field were refinements in the use of 2,4-D to prevent preharvest drop of apples; better control of peach mosaic; more knowledge about nitrogen fertilization of apple and peach orchards and about chemically induced tetraploid forms used in peach breeding; and progress in study of resistance of citrus to tristeza, a destructive South American disease potentially dangerous to citrus in the United States.

Tobacco advances included a male sterile line, which was established by fertilizing wild species with pollen of cultivated tobacco, followed by backcrossing that always used the pollen of cultivated tobacco on the hybrid flowers. This brought the chance of hybrid seed production and the further interesting possibility of growing plants that set no seed, which would eliminate topping.

Cotton breeders, looking for new genes (inheritance carrying bodies) to make U.S. cottons better, found in co-operative mill-run tests that the new American-Egyptian variety of cotton, Pima 32, compared favourably with a foreign variety popular for thread and fine combed yarns.

Soil and fertilizer studies brought out new facts on effects of various chemicals on yields and on soil bacteria factors in crop production. Engineering research gave new data on storage of grain, cold storage of fruits and vegetables, effects of building design on comfort and efficiency of farm animals, fuel saving in curing tobacco and hay-drying equipment. Improvements were made in on-the-farm processing of various crops, such as conditioning corn and small grain and rice, to keep down spoilage in storage.

The office of experiment stations administered federal grants to the state agricultural experiment stations in the amount of $10,492,848. The stations also had about four times that amount of nonfederal funds available during the year. Some 4,162 lines of research were active under federal grants and about 4,700 under other funds. The administration of the federal experiment station at Mayagüez, Puerto Rico, remained a further responsibility. (P. V. C.)

Agriculture.

For United States agriculture, 1949 was a bountiful year without a crop scare; crop productivity continued at a high level compared with the years prior to World War II, though below the record level of 1948. New record production was achieved in 1949 only in rice, dry beans and pears, but several other crops were near record and rather uniformly large production gave an over-all result only 6% less than the previous year. Livestock numbers, particularly hogs and poultry, increased with the result that an increased volume of production in the livestock sector balanced the lesser crop production, giving a total equal to the 1948 record.

The price situation was the most unfavourable of recent years. After a sharp break in February (as in 1948), an irregular decline continued. By December the parity ratio (ratio of prices received by farmers to prices paid, interest and taxes) had fallen to 98, the first time it had been less than 100 since Nov. 1941. As usual in recessions, the farmer found himself at a disadvantage, with the price decline proceeding more rapidly in farm products than in other parts of the economy; the index of prices received by farmers stood at 236 in Dec. 1949, compared with 268 in Dec. 1948, and a record high of 307 in Jan. 1948; but the index of prices paid by farmers, including interest and taxes, stood at 240, compared with 246 in Dec. 1948 and a high of 249 in Sept. 1948.

In spite of the slow decline in prices, the volume of agricultural marketings was such as to provide a gross income to farmers of about $32,000,000,000, compared with $35,300,000,000 in 1948. However, because of higher costs of production, the realized net income, which had been declining since 1947, in 1949 was estimated at only $14,000,000,000, compared with $16,700,000,000 in 1948. Agricultural assets at the beginning of the year were estimated at $130,000,000,000, compared with $122,278,000,000 a year earlier and $53,805,000,000 in 1940. But farm land values, which constituted a large portion of the assets, declined 5% or 6% during the year; hence, total assets were also lower by the year end.

The world food crisis, which had been in a dangerous phase in early 1948, was relaxed in the latter part of 1948 and became still easier in 1949 as world crops continued favourable and surplus stocks of some major foods accumulated in exporting countries. Famine once again was not prevalent in any large

Table I.—*Index Numbers of the Volume of U.S. Agricultural Production through Two War Periods**

(1935–39 = 100)

	1915	1920	1925	1930	1935	1940	1945	1946	1947	1948	1949
Crops											
Food grains	147	126	95	109	81	110	155	164	197	190	165
Feed grains and hay	126	149	128	83	91	114	144	172	131	206	182
Cotton	86	100	122	105	81	95	68	66	93	117	126
Tobacco	80	104	95	113	89	101	137	160	145	136	137
Truck crops (vegetables) . . .	35	51	74	91	92	110	142	158	141	144	144
Fruits and nuts . . .	73	76	74	89	95	110	112	133	129	127	135
Sugar crops	73	98	73	85	89	104	94	103	110	89	99
Total crops . . .	95	102	99	96	89	107	122	135	136	154	148
Livestock											
Meat animals . . .	92	99	107	100	90	118	147	145	145	130	133
Poultry and eggs . .	78	78	93	106	92	109	170	153	157	153	163
Dairy products . . .	70	72	85	94	98	105	119	120	117	114	117
Total livestock . .	81	85	96	99	93	112	141	137	137	130	133
Grand total . . .	86	92	97	98	91	110	134	136	136	139	139

*Estimates by the U.S. department of agriculture; 1949 figures are preliminary.

CO-OPERATIVE FARMERS of Burlington county, N.J., picking sweet corn at night for store-door delivery to neighbouring cities. A 50-day drought in the New England states, ending July 13, reduced the corn yield in this county from an average of about 1,750,000 bu. to 250,000 bu., an estimated loss in income of about $3,000,000

portion of the world during 1949. (*See* Food Supply of the World.)

Crop Production.—The aggregate volume of all 1949 crops in the U.S. declined to 148% of the 1935–39 base, but was second only as compared with a record high volume of 154% in 1948. Food grains declined substantially to 165% of the base, compared with the very high levels of 1947 and 1948, in spite of the fact that rice was at a new record high; feed also declined relative to the record of 1948 but exceeded the high level of 1946. Cotton was nine points higher than in 1948. Many other agricultural crops were near record levels of production. Total harvested acreage for the 52 principal crops amounted to 356,041,000, compared with 352,297,000 in 1948 and a ten-year average of 340,709,000. This acreage was larger than in any other year since the peak period of 1930–33. Losses from weather damage or insect destruction of planted crops amounted to nearly 13,300,000 ac., more than in any other year since 1943, but near average for the decade. Abandoned winter wheat acreage constituted a larger than usual portion of the total. Yields per acre were above average for most crops; grain sorghums, dry beans and soybeans set new records, and the composite yield stood at 142% of the 1923–33 average, exceeded only by the 151% of 1948. Yields of wheat, flaxseed and dry peas were disappointing.

The eight major grains in 1949 produced a total tonnage of 163,000,000, the second largest on record—1948 provided a record of 180,500,000 tons. The food grains constituted 37,000,000 tons of that total, the third highest year on record, exceeded only by the 42,000,000 tons in 1948 and a record of 44,000,000 tons in 1947. The 1949 tonnage included the fourth largest wheat crop, the record large rice crop, the smallest crop except one, during the century, of rye and a relatively small buckwheat crop. The feed grain total of 126,000,000 tons represented the second largest on record but a decline from 138,000,000 tons the previous year; included were a large corn crop (in spite of some drought and the cornborer), the second largest grain sorghum crop, a more than average oat crop and a less than average barley crop.

The oilseed crop of 1949 amounted to 15,300,000 tons, near the 1948 record and 41% more than average. Soybeans approximated the 1948 record, cottonseed was about 9% in excess of 1948 and 40% more than average; flaxseed and peanuts were less than the 1948 record crops, but flaxseed was nevertheless 45% more than average, and peanuts a good average outturn.

A large sugar crop was harvested; fruits and nuts produced a bountiful crop about 7% larger than in 1948; the truck crops were approximately as plentiful as in 1948, though other vegetables were somewhat shorter.

Corn was planted exceptionally early under very favourable conditions on a slightly larger acreage than in 1948. Although the crop progressed to an early harvest, some dry weather plus exceptional damage by the cornborer resulted in yield estimates being progressively lowered; the final estimate was an average yield of 38.9 bu. per acre for the nation, against 42.8 bu. in 1948. An exceptionally high wind in October made gleaning by hand or livestock necessary to gather the portion of the crop on the ground which could not be harvested by the mechanical pickers.

The 1949 wheat crop, though the fourth largest on record, was the disappointment of the year. A record acreage was sown and survived the early stages nicely, only to be rather severely

Table II.—*Production of Principal U.S. Crops*

(In thousands)

Year	Corn bu.	Oats bu.	Wheat bu.	Cotton bales	Tame hay tons	Rice bu.	Tobacco lb.	Potatoes bu.
1933	2,399,632	733,166	551,683	13,049	66,530	37,651	1,371,131	342,306
1934	1,461,123	542,306	526,393	9,636	55,270	39,047	1,081,629	406,105
1935	2,303,747	1,194,902	626,344	10,638	78,138	38,784	1,297,155	386,380
1936	1,507,089	785,506	626,766	12,399	63,536	49,002	1,154,131	331,918
1937	2,644,995	1,146,258	873,993	18,946	73,785	53,364	1,553,405	393,289
1938	2,542,238	1,053,839	930,801	11,943	80,299	52,303	1,378,534	371,617
1939	2,619,137	937,215	754,971	11,817	75,726	52,306	1,848,654	364,016
1940	2,449,200	1,235,628	816,698	12,566	86,312	52,754	1,451,966	397,722
1941	2,672,541	1,176,107	945,937	10,744	82,358	54,028	1,261,364	357,783
1942	3,175,154	1,358,730	981,327	12,824	92,245	66,363	1,412,437	371,150
1943	3,034,354	1,137,504	841,023	11,427	87,244	64,843	1,402,988	464,999
1944	3,203,310	1,154,666	1,072,177	12,230	84,076	68,161	1,956,022	383,134
1945	2,880,933	1,535,676	1,108,224	9,015	95,289	68,150	1,993,837	418,020
1946	3,249,950	1,497,904	1,153,046	8,640	89,195	72,216	2,319,409	484,174
1947	2,383,970	1,199,422	1,367,186	11,857	89,286	78,259	2,109,581	389,048
1948	3,681,793	1,493,304	1,313,534	14,877	86,793	85,056	1,980,325	454,654
1949	3,377,790	1,322,924	1,146,463	16,034	87,009	89,141	1,990,129	401,962

Table III.—*U.S. Production and Yield Per Acre*

	1949		1948	
	Yield	Production in thousands	Yield	Production in thousands
Field Crops				
Corn, bu.	38.9	3,377,790	42.8	3,681,793
Wheat, bu.	14.9	1,146,463	18.0	1,313,534
Oats, bu.	32.6	1,322,924	37.1	1,493,301
Barley, bu.	24.1	238,104	26.4	315,894
Rye, bu.	12.0	18,697	12.6	26,449
Flaxseed, bu.	18.9	43,664	11.2	54,529
Rice, bu.	49.0	89,141	47.8	85,056
Hay, all, tons	1.36	99,305	1.36	99,471
Beans, bags (yield in lb.)	1,164.0	21,554	1,087.0	20,827
Soybeans, bu.	22.4	222,305	21.4	223,006
Peanuts, lb.	762.0	1,853,140	706.0	2,338,470
Potatoes, bu.	211.4	401,962	215.5	454,654
Sweet potatoes, bu.	100.1	54,232	97.4	50,204
Tobacco, lb.	1,221.0	1,990,129	1,274.0	1,980,325
Sugar beets, tons	14.7	10,168	13.6	9,422
Cotton, bales (yield in lb.)	285.8	16,034	312.6	14,877
Fruit Crops				
Apples, bu.	...	133,181	...	88,407
Peaches, bu.	...	74,780	...	65,352
Pears, bu.	...	36,627	...	26,334
Grapes, tons	...	2,702	...	3,044
Oranges, boxes	...	110,000	...	104,020
Grapefruit, boxes	...	36,350	...	45,520

damaged just prior to harvest in the southern and central plains by excess rain and fungus diseases and in the Palouse and northern plains by drought. As a result, storage was available at least in needed amounts. Nevertheless, the total supply situation was such that acreage allocations were set for the 1950 crop at about 15% less than in 1949. It was indicated that total domestic consumption of the large crop would not be much more than 700,000,000 bu. Exports, which in 1948–49 reached the unprecedented level of 503,000,000 bu., were expected to be less than 400,000,000 bu. Thus, the carryover at the end of the crop year, July 1, 1950, would be 350,000,000 bu. or more, mostly owned by the government, and with exports apparently to decline still further. The preliminary survey in December of the 1950 winter wheat crop suggested that sown acreage had been reduced about as requested, but that the crop was in excellent condition and might produce nearly as much as in 1949.

The cotton crop of 16,034,000 bales was the largest since 1937 and the sixth largest on record. The mounting surplus, mostly in the hands of the Commodity Credit corporation, and the expanded acreage in 1949 resulted in an acreage goal allocation of about 21,000,000 for 1950 (down from 26,898,000 harvested in 1949) plus marketing quotas. The Brazilian crop was expected to be smaller than in 1948.

A crop of 401,962,000 bu. of white or Irish potatoes was produced, compared with 454,654,000 bu. in 1948, even though the harvested acreage was the smallest since 1878 and less than the official goal. Nevertheless, an estimated $50,000,000 to $60,000,000 support program was under way with prices being supported at 60% of parity against 90% in 1948. The average yield of 211.4 bu. per acre was not much less than the high 215.5 bu. of 1948, and much more than the 145.5-bu. ten-year average. Maine had a record yield of 450 bu. per acre. The European crop (excluding the U.S.S.R.) was 4,414,363,000 bu., compared with 5,054,390,000 bu. in 1948.

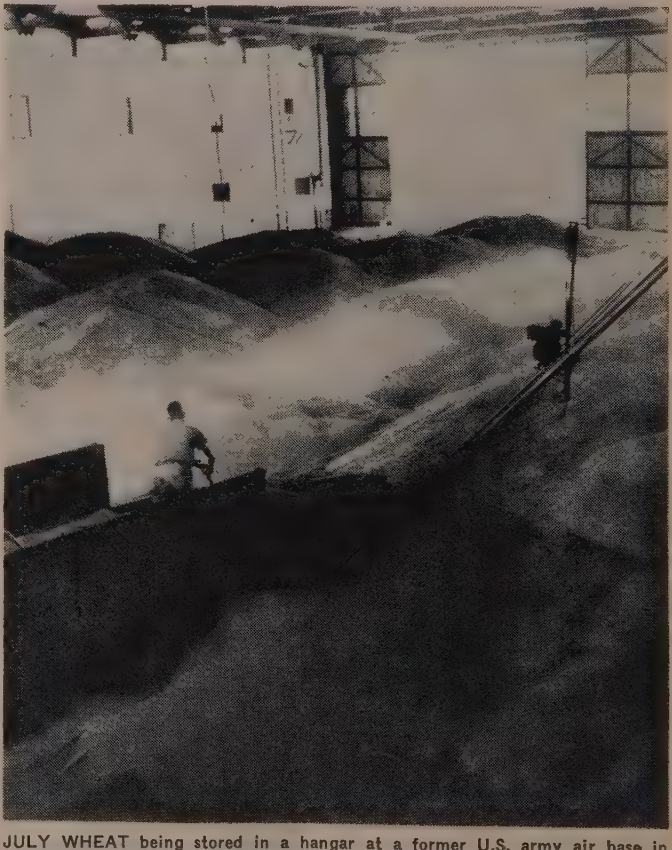
Such bountiful U.S. harvests and increasing year-end carryover stocks, mostly in government ownership, plus substantial general agricultural recovery in western Europe to which the U.S. had been exporting exceptional amounts of food, brought the problems of mounting production very much to the forefront of farm and political discussion and policy-making. The extension of support prices at 90% of parity for some 1949 crops, and in the Agricultural act of 1949 to some 1950 crops, encouraged continued all-out farm production.

The government, meanwhile, ordered allocation of reduced acreage on several major 1950 crops and marketing quotas on a few.

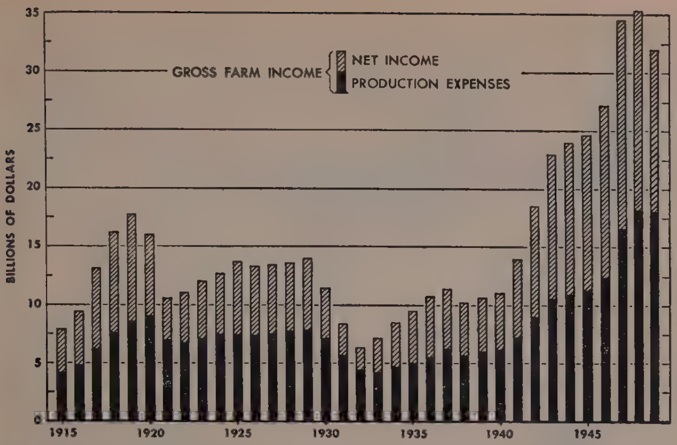
Livestock Production.—The somewhat regular variation over the decades in livestock numbers, sometimes referred to as the livestock cycle, changed phase in 1949, most kinds (excepting particularly horses and mules and possibly sheep) beginning another period of expanding numbers. The reasons apparently differed somewhat for each type of animal, but the record abundance of feedstuffs was recognized as a major factor. The expansion in livestock and its products during 1949 was sufficient to counterbalance the moderate decline in over-all crop production, giving a total agricultural production volume for 1949 equal to the record 1948 production.

All cattle at the beginning of the year totalled 78,495,000 head, compared with 78,126,000 head a year earlier and 85,600,000 head at the peak in 1945, but approximately 10,000,000 head more than prewar. Of that total, 24,450,000 head were milk cows, against 25,039,000 a year before. Slaughter of about the same number of beef animals at slightly heavier weights than in 1948 provided an estimated 10,880,000,000 lb. of beef and veal, compared with 10,600,000,000 lb. in 1948 and about 8,000,000,000 lb. prewar.

There were 57,139,000 head of hogs on U.S. farms at the beginning of the year, an increase from 55,028,000 head in 1948 but much less than the 83,700,000 head at the peak in 1944. The major spring pig crop was 59,039,000 head, much more than the 51,266,000 head of a year earlier, and the fall pig crop was indicated at 37,262,000 head, compared with 33,921,000 head a year before. Slaughter during the year produced an outturn of 10,650,000,000 lb. of pork, against 10,246,000,000 lb. in the previous year. At the year end it was estimated that pork production in 1950 might approximate 11,500,000,000 lb., a result of the increased fall pig crop of 1949 plus an indicated expansion to 62,500,000 head in the spring crop of 1950. This was a logical development from the very abundant corn crop and the favourable feeding situation. The corn-hog ratio in Nov. 1949 approximated the favourable level of 15.3 to 1, as against an average of about 12 to 1 over the long term and an average of



JULY WHEAT being stored in a hangar at a former U.S. army air base in Liberal, Kan. With a bumper wheat crop, and granary space at a premium, U.S. farmers and grain merchants pressed many such shelters into service



GROSS FARM INCOME: net income and production expenses of U.S. farm operators, 1915–49, including government payments beginning in 1933. Compiled by the U.S. bureau of agricultural economics. Data on 1949 are tentative estimates

13 to 1 for 1948.

In great contrast with the record high price of $31.85 per hundredweight on the Chicago market in Aug. 1948, average hog prices in 1949 mostly remained less than $20 per hundredweight and in December declined to a low for the year of $14.80 per hundredweight.

Sheep on U.S. farms at the beginning of the year, 31,963,000 head, were the smallest number from the time records had been kept, having declined from 34,827,000 head the previous year and more than 50,000,000 head prewar. Consequently, the lamb crop of 1949 was a record small one of 18,906,000 head and the indicated slaughter during 1949 provided only 600,000,000 lb. of lamb and mutton, against 753,000,000 lb. the previous year.

The 24,450,000 milk cows on U.S. farms at the beginning of 1949 represented a decline from 25,039,000 head in 1948 and from a peak of 27,770,000 head in Jan. 1945, but it was indicated that the end of 1949 would show an increase. As a result of very heavy feeding of the smaller number of cows from the abundant harvests of 1948 and the fine pastures of 1949, milk production per cow reached record high levels, and total production for the year was about 118,000,000,000 lb., 2% more than in 1948, with still larger production expected in 1950. Prices of most dairy products declined in 1949, sharply at wholesale, very moderately at retail, and the government continued to accumulate butter and dry milk powder in large amounts in its price-support operations.

Poultry provided a large outturn during 1949, the volume amounting to 163% of 1935–39, whereas 1948 was 153%. Hens on farms at the beginning of the year were 448,838,000, compared with 461,550,000 head a year before. Chickens raised in 1949, excluding commercial broilers, were 749,000,000 head, as compared with 637,000,000 head the year previous. Broiler production continued at a high level.

No recent year, not even 1949, showed an interruption in the fast pace of the U.S. horse to rarity, if not oblivion. There were 5,921,000 head on farms, against 6,589,000 head in 1948. Mules were 2,353,000 head, against 2,541,000 head a year previous.

World livestock numbers were restored rapidly. Cattle were estimated at a record 761,000,000 head, hogs at 261,000,000 head were up 6% compared with a year earlier and sheep at 720,000,000 head had increased for the second consecutive year. Even world horse numbers increased slightly to an estimated 76,000,000 head.

Food Stocks and Exports.—Food stocks continued to increase in 1949 in the major exporting countries. Exports after reaching very high levels during the early part of the year appeared to be easing off in the latter part of the year. On July 1, grain stocks in the four principal exporting countries were indicated at 72,800,000 short tons, 35% larger than the average for five recent years and 68% above 1948 stocks. Of that total about 52,000,000 tons were in the U.S.; Argentina held 15% of the total, Canada 9% and Australia 4%.

Food exports by the U.S. in 1948–49, mostly to Economic Co-operation administration countries or occupied areas, amounted to about 49,521,000,000 lb. Wheat in some form made up more than three-fifths of the total. Other grains accounted for about one-fifth. (*See* also EUROPEAN RECOVERY PROGRAM.)

Farm Prices.—Farm prices continued to decline in 1949. In December the index of prices received for all farm products stood at 236 (1909–14=100), as compared with 268 a year earlier and a record high of 307 in Jan. 1948. Even the maintenance of that level was to a considerable degree the result of government support programs; although prices in the case of particular products were less than support prices, the official program appeared to have much weight in preventing some farm prices from collapsing. Crop prices in general were only 208% of the base, compared with 228% a year earlier, whereas livestock and its products were at 261% of the base, as compared with 305% in Dec. 1948.

Table IV.—*Farmers' Average Prices, Certain U.S. Crops, on Selected Dates*

(In cents per unit)

	Wheat per bu.	Corn per bu.	Oats per bu.	Barley per bu.	Rye per bu.	Buck-wheat per bu.	Pota-toes per bu.	Eggs per doz.	Cot-ton per lb.
Oct. average, 1909–13	88.1	64.8	38.4	60.5	72.0	71.1	65.0	23.8	12.10
Oct. 15, 1936	106.8	97.9	43.1	84.2	80.4	78.3	97.9	27.6	12.23
Oct. 15, 1937	88.7	58.9	28.8	52.0	63.8	62.4	48.5	25.2	8.10
Oct. 15, 1938	52.2	41.9	22.1	36.1	32.9	54.5	51.0	27.1	8.53
Oct. 15, 1939	70.3	47.6	30.3	42.2	45.1	62.7	66.4	22.9	8.73
Oct. 15, 1940	68.2	59.4	28.3	38.2	40.5	54.4	52.0	23.7	9.35
Oct. 15, 1941	91.0	64.9	38.9	49.1	51.3	64.3	67.2	31.8	16.55
Oct. 15, 1942	103.5	77.5	43.2	57.6	52.9	77.0	102.5	37.4	18.87
Oct. 15, 1943	135.0	107.0	77.4	103.0	101.0	110.0	128.0	45.2	20.28
Oct. 15, 1944	142.0	113.0	65.9	95.4	108.0	102.0	142.0	38.8	21.25
Oct. 15, 1945	151.0	113.0	62.8	101.0	138.0	106.0	126.0	42.6	22.30
Oct. 15, 1946	188.0	171.0	79.9	135.0	199.0	144.0	122.0	51.5	37.69
Oct. 15, 1947	266.0	223.0	109.0	177.0	249.0	197.0	150.0	55.3	30.65
Oct. 15, 1948	198.0	138.0	70.0	110.0	143.0	117.0	142.0	54.7	31.07
Oct. 15, 1949	189.0	109.0	62.3	107.0	128.0	97.9	130.0	51.4	28.70

Farm Income.—Late in the year it was estimated that the total gross farm income for 1949 would be about $32,000,000,000, or approximately 10% less than in 1948. This gross income included not only cash income from marketings, but government payments, value of home consumption, rental value of dwellings and expenses of agricultural production. Total farm production expenses amounted to about $18,000,000,000, only 3% less than the $18,600,000,000 of the previous year. Most of the decrease in costs was the result of a sharp decline in purchased feed prices; expenditures for stock and labour were also slightly lower. Operating costs for motor vehicles were about 10% higher; taxes and depreciation charges also were higher. Realized net income was estimated at $14,000,000,000, compared with $16,700,000,000 in 1948. Nevertheless, in the prewar year of 1938, realized net income was only $4,327,000,000. Cash receipts from marketings in 1949 were estimated at about $27,700,000,000, or 9% less than receipts in 1948. Although both crops and livestock were marketed in a little larger volume than in 1948, total crop receipts were estimated at $12,500,000,000, down 7% from the 1948 level, and livestock and its products at $15,200,000,000, down 11% from 1948. The income, credit and debt structure of U.S. agriculture continued to appear favourable.

Farm Land Values.—Farm real estate in the U.S. declined in value by about 6% in the year ending Nov. 1949, as compared with peak values a year earlier. The decline was irregular, amounting to 10% to 14% in some mountain and western states, whereas a few midwestern states recorded an increase.

OPERATION "HAYLIFT," showing a U.S.A.F. C-82 dropping bales of hay beside a starving herd of cattle at Lund, Nev. Similar emergency relief was brought to thousands of cattle and sheep marooned by a series of blizzards that hit western and mountain states of the U.S. early in 1949

Also, very little of the better land was being sold and less desirable land showed larger reductions. The amount of funds available for farm mortgage financing decreased as farm prices declined.

Farm Population.—By preliminary estimate as of the beginning of the year, the farm population of 27,776,000 constituted about 19% of the nearly 150,000,000 U.S. total, the agricultural group having increased compared with 1948, when it was 27,440,000 persons. In 1940 there were 30,269,000 included in the farm population, or 23% of the U.S. total, and in 1920 there were 31,614,000 on U.S. farms, or 29.9% of the total population.

Farm Labour.—Farm employment at the end of 1949 was 7,150,000 persons, almost the same as a year before, but of course far less than the peak employment of the busier part of the agricultural year when slightly more than 12,000,000 persons were employed, of whom more than three-fourths constituted family labour.

Not only was the number of persons employed in agriculture in 1949 about 3% less than during the previous year but farm labour was slightly less expensive. The decline was on the order of 1%. Rural living costs were about steady.

Farm Machinery.—The farm machinery supply situation eased significantly during 1949 in relation to demand, although prices were the highest on record. Mechanization of U.S. agriculture continued at an unparalleled rate. The number of tractors on farms at the beginning of the year was 3,500,000, 281% of the prewar level and 350,000 more than a year earlier, although the cost of using tractor power was higher than in any previous year. Used machinery declined in price. Automobiles and motor trucks on farms were at peak levels in 1949. Exports of farm machinery were higher in early 1949 than previously and the year averaged near 1948.

Commodity Credit Corporation.—This financing organization of the department of agriculture carried on three major programs during the year 1948–49: (1) The price support program; (2) the supply program; (3) the foreign purchase program. During the year it received additional legislative authority to expand its grain storage activities, which it did, particularly with reference to corn, contracting for more than 250,000,000 bu. of new storage space, most of which was used for storing corn taken over by the government under support operations for the 1948 crop.

Under the farm price support operations, the CCC at the end of October had $3,148,577,435 (of its authorized $4,750,000,000 borrowing authority) tied up in farm commodities. It held at that time an inventory of $1,692,478,677 worth taken over under price support and was additionally obligated under loan and purchase agreements to the possible extent of $1,456,098,758. Additional funds had to be held in reserve to meet programs in process, but it appeared that the borrowing authorization was sufficient to meet obligations resulting from the 1949 crops. It was indicated that additional borrowing authority would be requested for operations covering the crops of 1950.

The inventory in October included: 3,756,864 bales of cotton costing $615,405,202, 182,736,985 bu. of wheat costing $442,379,272, 364,962,841 lb. of linseed oil costing $102,428,703, 15,334,146 bu. of flaxseed costing $97,181,136, 68,873,456 lb. of dried eggs costing $88,894,070, 89,257,414 lb. of wool costing $68,591,529, 88,768,703 lb. of butter costing $54,498,595, 4,892,858,000 lb. of beans costing $43,018,216 and 27,967,266 bu. of corn costing $42,385,599. It was indicated that funds tied up in inventory were not realized losses but would be recovered in part or in total when inventory was liquidated. The realized net loss for the year 1948–49 was $253,000,000, of which potatoes accounted for $204,000,000.

Marketing Research.—Activities under the Research and Marketing act of 1946 progressed in 1949 into numerous specific projects, bearing on the efficient processing and distribution of agricultural commodities and new and expanded uses for agricultural products. Meanwhile, the farmer's share of the market-basket dollar declined to approximately 48%, as compared with 53% in 1948 and 40% in 1940.

Rural Electrification.—Rural U.S. moved still further into the electric power age during 1949. It was indicated that 78.2% of the country's farms were electrified.

Commodity Trading.—Activity in commodity future markets declined in 1948–49, particularly as regards wheat and cotton, yet was somewhat greater than in any year in the decade except 1947–48. Speculative activity for the most part was more orderly than in the previous year, excepting for a sharp price break in February followed by prompt recovery. The Commodity Exchange authority continued to request legislation to extend its supervision to futures trading in 11 additional commodities, for authority to fix minimum margin requirements on speculative transactions and to require the registration of commodity trading advisory services.

Agricultural Legislation.—The Brannan proposal (by Charles Brannan, secretary of agriculture) of April 1949 did not become law, but it was the most discussed farm legislation proposal of the year. It was a price support plan based on an income objective. The secretary of agriculture and others continued to explain it as the year ended. The major farm organizations and agricultural leaders, in and out of government, disagreed sharply as to its merits. The following is a brief synopsis of the proposal:

> *A farm income standard* would be set as a minimum goal under which farm purchasing power would be maintained at least as high as the average of the first 10 of the most recent 12 years. For 1950 this would require a dollar income of $26,200,000,000, about 15% less than the $31,000,000,000 of 1948. This minimum goal was to be used only as the starting point for computing commodity price supports.
>
> Definite *price support* would be assured on those commodities that ranked highest in importance to farm income and to the national diet. Commodities suggested for priority claim on support funds included corn, cotton, wheat, tobacco, milk, eggs, chickens and the meat animals. They accounted for about 70% of cash farm receipts. Other commodities would be supported within the limits of available funds.
>
> Two major *methods of support* would be used. On storable commodities, loan and purchase agreements would be continued. On perishable commodities the entire production would go to the consumer through the usual market channels at such prices as supply and demand would indicate. However, if the average price received by the producers for a given commodity proved to be lower than the official support price level, the producer would receive a compensatory production payment for the difference between the support price and the average market price.
>
> There would be *conditions* and *limits* on price support. Eligibility for price support on the part of a particular farmer would be tied to soil conservation requirements, to acreage and marketing limits when wasteful surpluses made them necessary and to volume per farm of supported commodities.

The Agricultural act of 1949 continued, for co-operators, for 1950, rigid price supports at 90% of parity on the six basic crops, corn, cotton, wheat, rice, tobacco and peanuts. (All six of them were under acreage allotment for the 1950 crop, and cotton, peanuts and tobacco were under the even stricter marketing quotas.) After 1950 there was provision for "flexible" or lower minimum supports, depending on the size of the total supply of the crop in relation to the normal supply. However, the degree of flexibility, as a maximum, as long as acreage allotments or marketing quotas remained in effect, was between 75% and 90% of parity, not between 60% and 90% as in the Agricultural act of 1948.

The 1949 act included mandatory price support for wool (including mohair), tung nuts, honey, intermediate and late Irish potatoes, milk, butterfat and the products of milk and butterfat. The level of support was provided as a range which varied with the different commodities and within which the secretary had discretion to set the specific level.

For other nonbasic agricultural commodities support was permissive at any level not to exceed 90% of parity. The modernized parity formula of the 1948 act was amended to include wages paid hired farm labour and wartime subsidy payments. Additional provision was made for disposal of perishable food commodities not produced in the U.S., to school lunch programs, Indian affairs, to local public welfare organizations and to private welfare organizations assisting needy persons, domestic or foreign.

Other agricultural legislation of 1949 resulted in the ratification of the International Wheat agreement, the amendment of the charter of the Commodity Credit corporation, provisions for rural housing and the initiation of a loan program for rural telephone development and expansion. (J. K. R.)

Other Countries.—All European governments continued to be concerned with agricultural plans and these were kept under general review by the Organization for European Economic Co-operation (*q.v.*), by the Economic Cooperation administration of the United States and by other bodies. Plans were upset by weather conditions during the period June to Sept. 1949 but basic progress continued to be made in providing the fertilizers, machinery and motive power needed for greater production. Imports of agricultural tractors into continental Europe had numbered 54,000 during 1948 as against only 14,000 during 1937 and, in addition, increasing numbers were available from continental factories themselves. Supplies of agricultural machinery were also greater. One of the most satisfactory improvements was in the supply of nitrogen fertilizers.

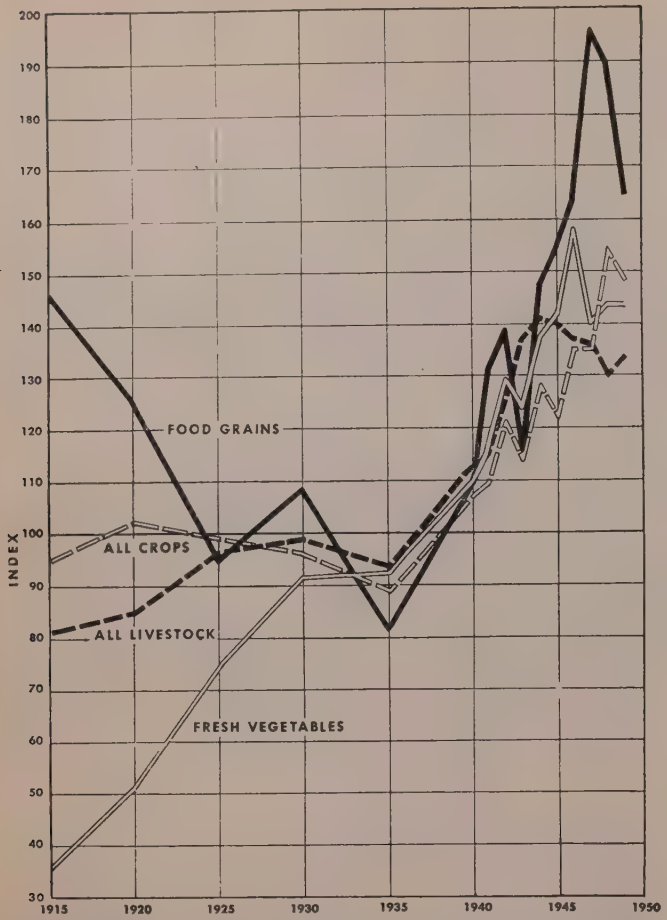
In several countries considerable public attention was drawn to the difficulties of inducing farmers to carry out the centrally devised plans. In the United Kingdom a shortage of workers, especially skilled workers, and of houses for them actually led to a reduction of acreages of intensive crops in some areas.

Argentine policies continued to influence European agriculture mainly through their effects on cereal, linseed and meat exports to Europe. The government called in June for an increase of 3,700,000 ac. in the area sown to wheat, a slight increase in that sown to coarse grains and maintenance of the linseed acreage. The fixed prices paid to farmers for fat cattle were raised about 37%. This plan, however, would still leave Argentine production far below prewar levels. The effects of industrialization and inflation, accompanied by control of farmers' returns, had reduced the number of agricultural workers by about 400,000 (20%) after 1937, and the area sown to cereals and linseed by about 14,000,000 ac. (30%). Even during the later part of 1949, the prices paid to farmers continued to be at a much lower level than prices charged to foreign buyers of farm produce.

In Australia and New Zealand emphasis on expansion of production continued and some encouragement was obtained from higher prices for dairy products and meat sold to the United Kingdom. The butterfat in dairy products delivered from New Zealand factories during the year ended July 1949 was 461,000,000 lb., 10% more than during 1947–48 and only 1% less than the record output of 1940–41.

Lamb production for export was also satisfactory but there were significant reductions in beef and pork outputs. In Aus-

BARRACKS for Puerto Rican seasonal workers on a fruit farm in Dutchess county, N.Y.; the men were brought from their homes in New York city to ease a local labour shortage, as arranged for in 1949 by the U.S. Employment Clearance service and the Puerto Rican Employment bureau in New York



FOOD PRODUCTION in the United States, as measured by index numbers (1935–39=100). Estimates by the department of agriculture; 1949 is preliminary

tralia total meat production was higher but exports were slightly reduced because home consumption of beef rose by 9%. The sowing of wheat was hindered by dry spells.

In India a major event of 1949 was the government's announcement in April that except in case of widespread failure of crops or for purposes of building up a central reserve no food grains would be imported after 1951.

The council of the Food and Agriculture Organization of the United Nations appointed a committee of experts in June to examine the problem of surpluses in some countries and starvation in others and this committee reported promptly that the causes of surpluses lay mainly in shortages of western hemisphere currencies. They proposed an international commodity clearing house with a capital of United States $5,000,000,000. This would be used, for instance, to buy United States wheat for India, the fund being repaid by India in rupees which would be held by the clearing house until they became convertible into United States dollars. Until there was fundamentally better balance in world trade it was foreseen, however, that this initial capital might comparatively soon be held in currencies still inconvertible into dollars.

In the United Kingdom agricultural prices were raised by an average of 7% following the February price review. This rise was the result of withdrawal of part of the subsidy on feedstuffs, of increase of agricultural wages by about 4% and, not least, of the desire to expand agricultural production further in accordance with the program first announced in Aug. 1947. Agricultural prices were, indeed, raised to the highest level ever recorded. After devaluation of the pound sterling these prices were not far out of line with price levels in the United States and Canada but they continued high as compared with the prices paid for the principal foodstuffs from Australia, New Zealand and nearly all European countries. Subsidies were continued in the United Kingdom on purchased fertilizers and on labour and machinery services administered by the county agricultural executive committees, but it was announced in July that half the fertilizer subsidy would be withdrawn in July 1950 and the remainder in July 1951. Complete withdrawal of the remainder of the feedstuffs subsidy in April 1950 was announced in October.

(*See* also Agricultural Research Administration; Census Data, U.S.; Chemurgy; Fertilizers; Fruit; Horticulture; Irrigation; Livestock; Meteorology; Prices; Rural Electrification; Soil Erosion and Soil Conservation; Vegetables; etc.; also under principal crops.)

Films of 1949.—*Date Culture* (Paul Hoefler Productions).

(J. R. Ra.)

Agriculture, U.S. Department of: *see* Government Departments and Bureaus.

Aircraft Manufacture. Before the end of World War II the aircraft manufacturing industry in the U.S. ranked among the leaders in dollar volume, output and employment. During the peak year of 1944 its 2,000,000 employees turned out more than 96,000 military aircraft. By V-E day its backlog of orders stood at more than $20,000,000,000. Although anticipated, the wholesale contract cancellations during the fall of 1945 imposed a severe shock. The postwar low occurred during 1946 when air-frame production in all categories fell to approximately 5% of the peak and employment had dropped to less than 9% of the wartime high. Production orders for military aircraft became a mere trickle of replacements. Manufacturers then turned their production effort into nonmilitary types. There was a considerable demand for new equipment for the civil air lines. Several manufacturers pinned their hopes on a rising market for personal aircraft.

The intervening years were periods of violent readjustment for the aircraft industry. The anticipated boom in personal aircraft failed to materialize and the demand for privately owned aircraft fell from 33,250 in 1946 to approximately 3,400 in 1949. Also, by 1949 the replacement program undertaken by the air lines immediately after the war approached completion and the deliveries of civil transports had fallen from 433 in 1946 to approximately 160 in 1949.

In spite of these negative factors, however, the aircraft manufacturing industry showed a steady recovery from the low of 1946 because of increasing demand for new military aircraft. The industry turned out only 13,000,000 lb. of military airframe weight in 1946. By 1949 the output had risen to 28,000,000 lb. Employment in the primary aircraft industry which had dropped to a low of 180,000 in 1947 had risen to approximately 218,000 by mid-1949.

To understand the 1949 position of the aircraft manufacturing industry it is necessary to review briefly certain political and technical trends of the preceding four years. Aircraft manufacturing is basically a munitions making industry. Its condition is inevitably related to the world political situation. The president's air policy commission (see *Survival in the Air Age,* 1948) and the congressional Air Policy board of 1948 were agreed upon the necessity of maintaining an aircraft manufacturing industry in readiness to produce the most effective types of military aircraft and aerial weapons in quantity on short notice at the outbreak of future hostilities. The unstable state of affairs in the world today led the congress to appropriate very large sums of money during the past few years for research and development and for new types of aircraft. During 1949 this resulted in substantial production orders for machines to replace World War II types in air force and navy squadrons.

Although by the end of 1949 the congress had not definitely made up its mind with respect to the proper peacetime level for the air forces (the air policy commission and congressional board had endorsed a program of 70 air groups for the air force) all were agreed on the necessity of a stable, long-term aircraft procurement program to provide proper support for the aircraft industry.

Certain technological advances of the past few years were having a profound effect upon aircraft manufacturing during 1949. During the war the emphasis had been almost entirely on production. Intensive research and development during the immediate postwar years had resulted in drastic design changes which were being reflected in manufacturing processes and production. The armed services were in 1949 replacing their obsolete equipment with new aircraft of tremendously improved performance.

The most radical change in aircraft manufacturing came about because of the introduction of jet-type power plants. This necessitated a complete redesign and retooling in air-frame and aircraft engine manufacturing plants. It also caused a decrease in the demand for aircraft propellers.

The availability of jet and rocket power plants and the greatly increased aerodynamic knowledge which resulted from intensive postwar research greatly extended the speed possibilities for aircraft. Already the so-called "sonic barrier" (approximately 760 m.p.h. at sea level) had been exceeded by piloted aircraft, and the probabilities pointed toward much higher flight speeds in the near future. Such speeds, however, impose demands upon human pilots that are physically impossible to meet. More and more effort, therefore, had been focused on the design and manufacture of pilotless aircraft or guided missiles. During 1949 many manufacturers found that they were giving more attention to the design of guided missiles than to conventional aeroplane types. Quantity production was expected to come in the near future.

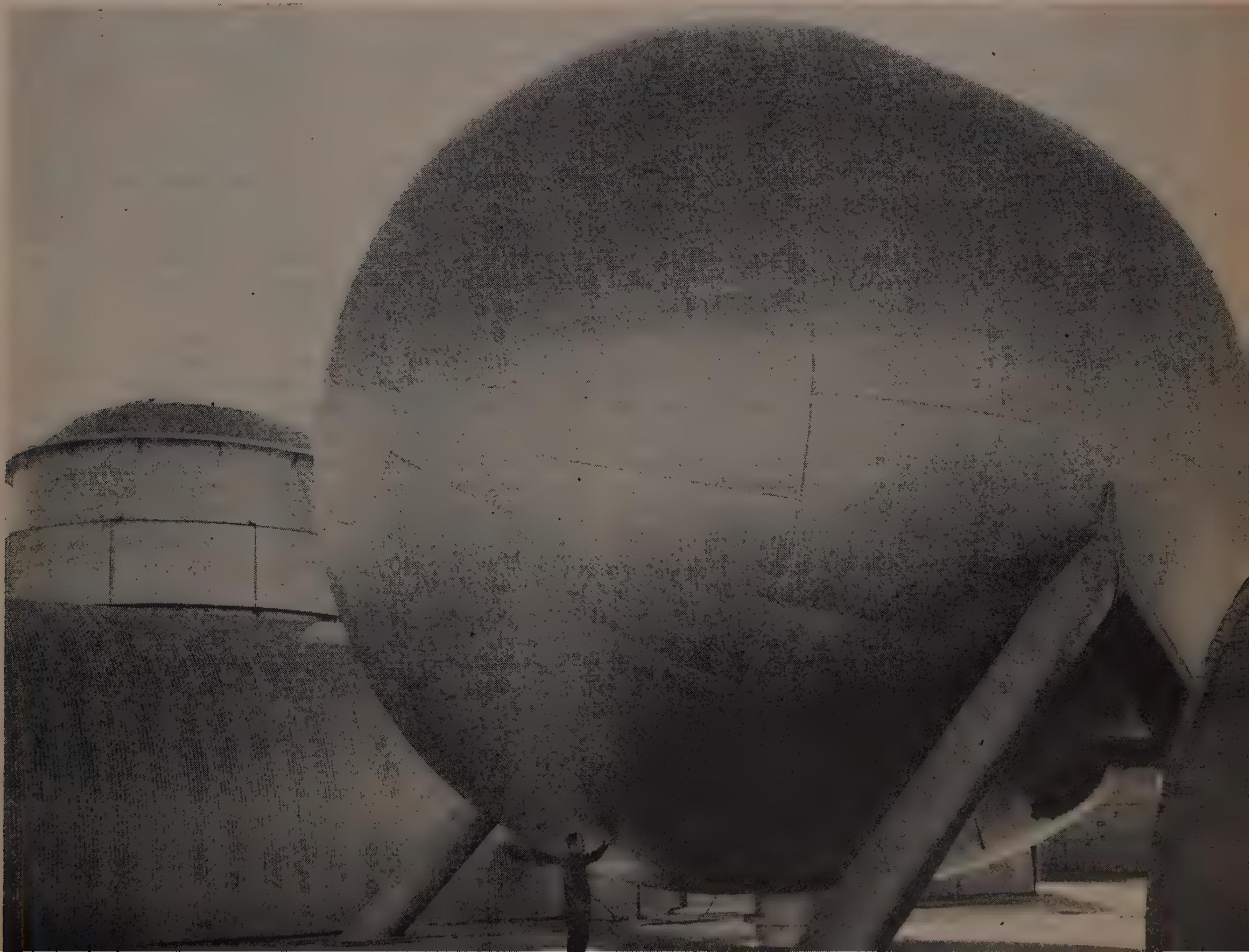
Aircraft manufacturing was also made more difficult by the increasing size and complexity of modern aeroplanes. In 1939 the average bomber weighed in the neighbourhood of 20,000 lb. (empty), a fighter 5,000 lb., a trainer 2,000 lb. and a transport about 12,000 lb. By the end of World War II 50,000-lb. bombers and transports were in service.

During 1949 at least one bomber of about 150,000 lb. (empty) was in production and several were coming along in the 100,000-lb. class. Jet fighters of about 12,000 lb. were being built and the average four-engine transport in air line service was running in the neighbourhood of 50,000 lb. empty.

The installation of very complicated automatic navigation, communication, ordnance and other devices in modern aircraft also vastly increased the manufacturing problem. The air frame and the power plant were generally less complicated than the auxiliary devices that went into them.

The net result of the increase in aeroplane size and complexity was greatly to increase the unit cost of aircraft. Where in 1939 a twin engine, 23-passenger transport cost about $150,000, a

VACUUM CHAMBER of the supersonic wind tunnel completed at Los Angeles, Calif., in 1949, by North American Aviation, Inc. The tunnel was to be used in studying the performance of guided missiles and planes travelling at speeds as high as 4,000 m.p.h.



four-engine 50–60 passenger air liner of 1949 cost in the neighbourhood of $1,000,000. The navy estimated that, on the average, each jet-powered aircraft procured during the 1949–50 fiscal year would cost $829,000. The air force figure was $900,000. Quantity production would, of course, materially reduce these figures.

The navy and air forces were paying a great deal of attention to "produceability." It was well recognized that the ability to turn out aircraft in large quantities in any national emergency was of utmost importance. Both services were spending considerable amounts of time and money on the study of production problems so that if any emergency should develop production lines could be started up with a minimum expenditure of time and effort.

During 1949 the aircraft industry did about $1,700,000,000 worth of business, the largest share of which came from military buying through government agencies. Output included approximately 2,500 military aircraft, 3,400 personal type planes and 160 civil transports of all types. For reasons of security military aircraft production was computed in terms of air-frame weight rather than number of units. On this basis the production for the year would reach approximately 28,000,000 lb. of air-frame weight as compared with approximately 25,000,000 in 1948. The money spent by the government with the aircraft industry included not only funds for the direct procurement of aircraft but also a substantial amount for research and development contracts covering both piloted aeroplanes and guided missiles.

The primary aircraft industry at the end of 1949 consisted of 34 manufacturers of complete aircraft, with 39 plants, and 13 manufacturers of aircraft engines, operating 14 plants. The balance of the industry consisted of a large number of propeller and accessory companies backed up by suppliers of parts and materials as well as subcontractors and manufacturers of subassemblies. The latter categories were of increasing importance. In the production of the Boeing B-47 bomber for example, 48% of the total cost went to hundreds of subcontractors, and in the manufacture of the General Electric J-47 turbojet engine it was estimated that 280 subcontracting companies participated.

The 3,400 output for personal planes was a great disappointment to those who before the end of the war predicted a probable production of 50,000–60,000 a year by 1950. The expectation that the demand for privately owned aircraft would take up much of the slack during the immediate postwar years had not been realized. That market failed to develop because the personal aeroplane was not developed to the point of real usefulness at low cost.

The output of commercial transport types came to about 120 units in 1949. Since the 1946 high of 433, the demand had been dropping off steadily as the civil air lines in the U.S. completed their modernization programs. At the end of 1949 there were approximately 1,100 transport aircraft in service on U.S. domestic and overseas air lines, which appeared to be about the number that the traffic could bear in the immediate future. Some replacements would be required during the next few years, but it was probable that the demands for the next year or two would fall below the 1949 level.

During 1949 the British unveiled two jet-type transport aircraft which had been observed with great interest by U.S. air line operators. A number of U.S. jet transport designs were in the offing. Several years must elapse, however, before interest would be reflected in actual orders for jet transports. Few air lines could afford to retire existing equipment in favour of jet-powered equipment much before 1955.

In addition to the conventional aircraft types mentioned above, helicopters were a factor in 1949 U.S. aircraft production. A number of new companies had come into the field but over-all production statistics were incomplete. It was estimated, however, that about 200 helicopters were produced in the United States during 1949. Most of them went to the military services for special uses (air-sea rescue work, etc.) but a few went into commercial use for the carriage of mail and small items in localized areas. (S. P. J.)

Air Forces of the World: *see* Aviation, Military.
Air Lift: *see* Aviation, Military; Berlin.
Air Mail: *see* Post Office.

Airports and Flying Fields. The 1949 Civil Aeronautics administration (CAA) revision of the annual three-year forecast of constructions and improvements contemplated under the Federal Airport plan called for the building or improvement of 4,977 airports at a cost of $1,115,300,000 of which $510,600,000 would be federal funds and $604,700,000 state and local contributions.

Under this program, which was to extend through 1953, 2,794 new airports would be constructed and 2,183 improved. By the close of the year, congress had appropriated $117,500,000 toward the total of $500,000,000 it authorized in 1947 when the Federal Aid Airport act was passed. The projected program included plans for a second large airport in the Washington area to relieve congestion at the Washington National airport.

Civil Airports by Class as of Dec. 1949

Class 1 and Sub 1	4,012
Class 2	983
Class 3	479
Class 4	368
Class 5	133
Class 6 and over	75
Total	6,050

Civil Airports by Type as of Oct. 1, 1949

Commercial	2,662
Municipal	2,180
CAA Intermediate Landing Fields	142
Military	366
All other types	1,066
Total	6,416

High-Intensity Approach-Light Development.—The aircraft committee of the munitions board approved the CAA-sponsored slope-line system of approach lighting for airport runways in use by the army, navy, air force and commercial operators. The system was originally recommended by a subcommittee on visual aids to air navigation following about 475 low-visibility tests at the Landing Aids Experimental station at Arcata, Calif.

The design of the slope-line system provides that the individual lights be seen as lines, rather than as points. Each unit is made up of 10 lights arranged in a line to form a component unit 14 ft. long. Each of the component lights has a fairly wide candle-power distribution laterally, with a controlled narrow distribution vertically. The lights are visible from the front through 180° only, for the definite reason that it is desired to eliminate as far as possible background illumination of the fog.

The slope-line system derives its name from the fact that the lighting units are mounted in a geometrical pattern, the outside ends of the units being nearest the ground, the inner ends being so elevated that the 14-ft. long units make a 45° angle with the horizontal. They are so arranged that if the units of any pair are extended in length the extensions will intersect on the glide path.

In order to carry out this design, as the beginning of the runway is approached the respective units of the pairs of slope-line lights are brought closer together so that the intersection of the imaginary extension lines always occurs on the glide path which is decreasing in elevation as the near end of the runway is approached. In this system it is not necessary for all the units to be on the same level. It is only necessary that each unit lie in the same 45° plane as the other units on the same side. These planes, intersecting on the proper approach path, define that path.

When a pilot on the proper glide path looks ahead he sees all of the slope-line lights lying in only two lines, one line on either side of the approach. As soon as he deviates from the proper path the lights break up into echelon, the exact appearance of each echelon depending upon the amount and direction of deviation.

It was intended to use white lights of approximately 100,000 candle power for the slope-line system. However, the colour of lights was not considered critical and the system could be adapted to whatever colour was selected as standard for high-intensity approach lights.

Briefly, the problem of landing an aeroplane when visibility is restricted involves the use of radio landing aids to lead the aeroplane into the approach path, and to bring it to within approximately 200 ft. of the ground, and then the use of visual aids on the ground to enable the pilot to complete his landing.

On one requirement all of the authorities and all of the proposed high-intensity systems agree. They all call for 3,000 ft. of approach lighting for every instrument-landing runway. Hence, provision for 3,000 ft. of land in the approach should be included with every airport where scheduled operations are anticipated, and 500 ft. additional to allow for the middle marker.

Immediate installation of high-intensity approach lights utilizing the slope-line system was planned for the Washington National airport, Washington, D.C., and the Los Angeles International airport, Los Angeles, Calif.

Cross-Wind Landing-Gear Development.—The CAA approved the use of the cross-wind landing gear in the DC-3 aircraft for a 40 m.p.h. cross-wind component. This gear in use on the DC-3 was developed by the Goodyear company and was given a CAA-approved type certificate. (*See* also CIVIL AERONAUTICS ADMINISTRATION.) (E. M. E.)

Great Britain.—By 1949, only one airport in Great Britain, London airport, fell into the A-1 category: *i.e.,* it had a main runway not less than 8,400 ft. in length, and could bear a single-wheel load of at least 100,000 lb. at 120 lb. per sq.in.

The concreting of the six-runway layout at London airport was almost completed; but much additional work to the lighting, drainage and radio aids remained to be carried out before further runways could be used. Development of the central terminal area was begun and four further temporary hangars were completed during the year.

The air traffic control problem became more acute, particularly in the London area, where London and Northolt, both handling heavy density traffic, proved to be too close under instrument flying conditions. Additional points of entry and exit for the Metropolitan Control zone were provided, an inner zone was created and the holding area for air liners waiting to land at Northolt was moved to near Bovingdon, Hertfordshire.

At Manchester (Ringway) one runway was extended by more than 1,000 ft. and a new terminal building opened. The stressing of the main runway at Prestwick, the Scottish transatlantic airport, for air liners of Stratocruiser weight was completed; and Glasgow (Renfrew) had its runways resurfaced.

Belgium.—At Brussels (Melsbroek) work was concentrated on building four double hangars to occupy 4,800 sq.yd. A start was made on developing Antwerp (Deurne) as an international air freight centre.

Finland.—It was announced that the airport for Helsinki, Malmi, was to be replaced by a new one at Seutula, to be ready for the Olympic games in 1952.

FIDO (Fog, Intensive, Dispersal of) undergoing acceptance tests at the Los Angeles airport in 1949, the first installation of this system at a U.S. commercial airport. Fido utilizes hundreds of high-pressure burners to disperse the fog, enabling air liners to land under conditions which would otherwise be prohibitive

France.—The airport construction work vote was cut by 85,000,000 fr., but the planned development of Paris (Orly) for intercontinental traffic was continued. The basic layout was to be similar to that of London airport; but two of the three runways in use by the end of 1949 were parallel.

Germany.—The Anglo-U.S. airlift of 1948–49 reached such proportions that the three receiving airports in Berlin dealt with the heaviest density of aircraft movements in the history of aviation. At Gatow airfield, the original steel-mesh runway was extended by 1,500 ft. of concrete, and, parallel to this, a new 6,000-ft. concrete runway was constructed. The airports from which Berlin was supplied all benefited materially from the airlift: Hamburg (Fuhlsbuettel) had a new 6,000-ft. permanent runway in use, and Frankfurt (Rhein-Main) had a second runway of 8,200 ft. under construction.

Italy.—The airports of Rome (Ciampino) and Naples (Capodichino) were being improved with funds provided under the European Recovery program. Ciampino had an imposing passenger-handling building in use, but an entirely new site for a Rome intercontinental airport was selected at Fogere, on the Tyrrhenian coast.

Netherlands.—The fine steel-and-glass terminal building at Amsterdam (Schiphol) came into partial service in May 1949. The new control tower was completed but technical equipment was awaited. Concreting work was concentrated on the new north-south runway, announced as complete at the end of the year.

Norway.—An aviation commission in June 1949 recommended new airports at Herdla, Gosse and Bodo, the improvement of Oslo (Fornebu) and Stavanger (Sola) and the retention of the existing seaplane bases. Gardenmoen, a major military base 22 mi. from Oslo, was scheduled to take the long-haul commercial traffic.

Portugal.—A seaplane dock, 1,509 ft. in length, was partially constructed at Cabo Ruivo (4 mi. upstream from Lisbon); and Lisbon's Portela de Sacavem, the land airport, had a new administrative block under construction.

Sweden.—The Stockholm (Halmsjön) project for an intercontinental land airport achieved limited development in 1949. By June, some 10,000,000 kronor had been expended, mainly on blasting operations.

Switzerland.—Geneva (Cointrin) remained unique among Europe's major airports in retaining a single broad 6,500-ft. runway. A new passenger-handling block with a single long frontage and a hangar to house up to ten 4-engined aircraft were opened in May 1949. Zürich (Kloten), an entirely new postwar enterprise, had three runways all in use by the same date; and the permanent terminal buildings were due for completion in 1950. (*See* also AVIATION, CIVIL; AVIATION, MILITARY.)

FILMS OF 1949.—*The Airport* (Encyclopædia Britannica Films Inc.).
(G. D. H. L.)

Air Races and Records. Cook Cleland, a home town pilot and winner in 1947, carried off the Thompson trophy, major prize of the national air races held at Cleveland, O., in 1949. Flying a Vought Corsair, Cleland got off in front and stayed there for the 15 laps of the 225-mi. test, setting a record of 397.071 m.p.h. average for the event. Only seven of ten planes in the final, the piston-engine division of the competition, finished and prizes totalled $40,000 of which Cleland won $19,100. Second place went to Ron Puckette of Lansdowne, Pa., who sped over the course at 387.527 m.p.h.

A crowd of 100,000 persons, which was on hand for the finals, was shocked when William P. Odom, round-the-world flier and starter in the big event, crashed and was killed. Odom, flying a radically modified F-51 Mustang that belonged to Jacqueline Cochran, dove into a suburban house a few minutes after his take-off. The crash resulted in the death of two persons who were in the house at the time.

Prior to his fatal accident, Odom had won the Sohio trophy in his first start as a closed-course racer. Odom had flown nonstop from Honolulu to Teterboro, N.J., earlier in the year to establish a record for light planes.

The fastest time ever made in a closed-course race was in the jet division of the Thompson when Capt. Bruce Cunningham of the fourth fighter group at Andrew Air Base, Md., flew his North American F-86 Sabre at 586.173 m.p.h. The old mark of 515.85 m.p.h. was set by Maj. G. E. Lundquist in a Lockheed F-80 Shooting Star.

The final heat of the Goodyear trophy race for midget planes was won by William Brennand of Oshkosh, Wis. Brennand posted an average of 177.340 m.p.h. Another Goodyear winner was H. R. Salmon of Van Nuys, Calif., who was in the group of Continentals. Steve Whitman of Oshkosh, Wis., captured the Continental Motor trophy before 25,000 at the All-American manoeuvres at Miami, Fla., in January where he averaged 176.867 m.p.h.

The Bendix trophy was won by Joseph De Bona. Six planes took off from Rosamond Dry Lake, Calif., in the flight to Cleveland and De Bona was first in. The winner, in a modified F-51 Mustang, set a record for the piston-engine division with an average of 470 m.p.h., the old mark of 460 m.p.h. having been made by Paul Mantz in 1947.

Competition in the Allison Jet trophy race, from Indianapolis to Cleveland, drew a crack field with the top prize going to an Air National Guard F-80C Shooting Star piloted by Lieut. W. C. Rew of the 196th fighter squadron. He averaged 594.806 m.p.h.

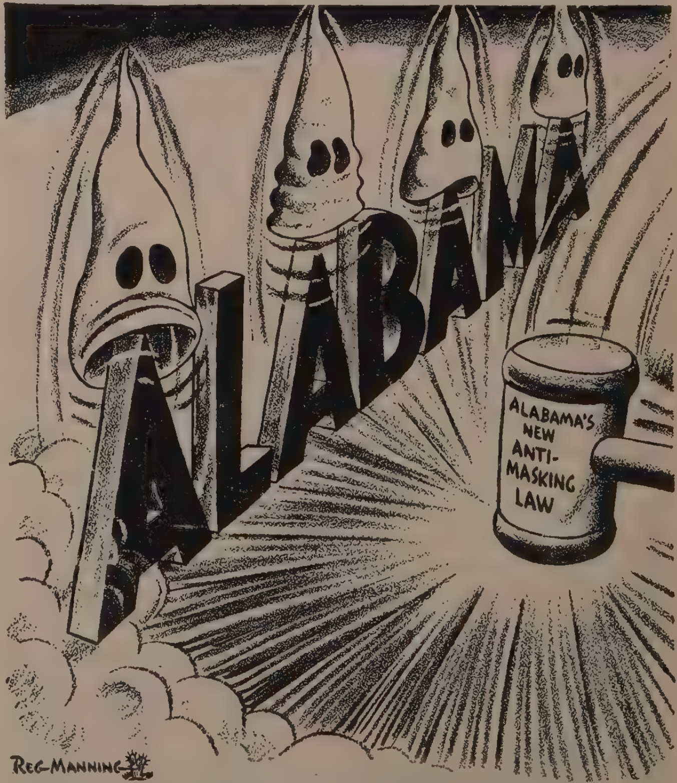
Peggy Lennox of St. Petersburg, Fla., won honours in the third annual all-women's meet at Miami, Fla. She was first home in the handicap flight from Montreal, Can., to Miami and won the Johnnie and Mack race after arriving. Kaddy Landry of Miami and Mrs. Helen McBride, another Florida pilot, were other feature winners.

Mrs. Zona B. King of Quincy, Calif., was first to reach Miami in the transcontinental race from San Diego. (*See* also AVIATION, MILITARY; GLIDING.)
(T. V. H.)

A.L.A.: *see* AMERICAN LIBRARY ASSOCIATION.

Alabama. Located in the heart of the "deep south," Alabama became the 22nd state of the United States Dec. 14, 1819. It is popularly called the "Cotton state," or the "Yellowhammer state." Area: 51,609 sq.mi. (51,078 sq.mi. of land and 531 sq.mi. of water). In 1940 the total population of the state was 2,832,961. Of this number 1,849,097 were whites, 983,290 were Negroes and 574 were classified otherwise; 2,821,004 were native-born and 11,957 were foreign-born. July 1, 1949, the U.S. census bureau estimated the total population of Alabama to be 2,920,000. Montgomery, the capital city, in 1949 had an estimated population of 111,450; Birmingham, the state's largest city, 311,750; and Mobile, the state's only seaport and second largest city, 167,600.

History.—The principal elective officials of the state in 1949 were: James E. Folsom, governor; J. C. Inzer, lieutenant governor; Albert A. Carmichael, attorney general; Dan Thomas, state auditor; Haygood Paterson, commissioner of agriculture and industries; Sibyl Pool, secretary of state; John Brandon, state treasurer; Austin R. Meadows, state superintendent of education. During the summer months of 1949 the state legislature met in regular biennial session. Administration forces and antiadministration forces opposed each other throughout the session and each succeeded in keeping the other's proposals



"BLOWING THE LID OFF!" cartoon comment by Manning of the *Arizona Republic* (Phoenix) on the Alabama state law passed in 1949 to prohibit the public wearing of masks from passing but failed to muster enough votes to enact its own. One statute enacted made it illegal in the state to wear a mask in public. This measure was supposedly aimed at an outbreak of mob action accredited to the Ku Klux Klan. Lawmakers adopted a two-year budget for the state with a straight 10% reduction in every department except the governor's office. The legislature presented nine constitutional amendments to the voters on general election day. One which was accepted authorized the governor to issue $2,000,000 in bonds as a part of a $12,000,000 state hospital building program. Another which passed would give the counties the right to levy taxes and issue interest-bearing bonds. It permits them to borrow in anticipation of revenues of special taxes levied by counties for hospital purposes. During the year a previous constitutional amendment which was a voter-restriction law was ruled in a federal court to be in opposition to the U.S. constitution.

Education.—During the academic year 1948–49 (ending June 30), the total number of public schools in the state was 3,700. Total enrolment for these schools was 657,359. Of this number 436,618 had elementary school standing and 220,741 had secondary school standing. There were 12,962 elementary and 8,175 secondary teaching positions in public schools. There were 9 state institutions of higher learning with a total of 26,772 students enrolled and 1,793 teachers.

Social Insurance and Assistance, Public Welfare and Related Programs.—Amounts spent for public assistance categories in Alabama during the fiscal year 1948–49 (ending Sept. 30) and average number of recipients (in parentheses) during 1948–49 were as follows: old-age assistance $19,298,111.45 (71,698); aid to the blind $369,651.46 (1,241); aid to dependent children $5,536,590.28 (12,748); aid to children in foster care $156,278.31 (486); aid to the handicapped $1,255,078.79 (6,382); temporary aid $32,476.36 (123). During the fiscal year 1948–49 approximately 95,000 beneficiaries were paid $16,275,063 under the unemployment compensation program. Approximately 39,000 unemployed persons were paid $8,090,350 under the readjustment allowance program and approximately 5,300 self-employed persons were paid $2,884,182 under the same program. State correctional institutions are largely self-supporting. On Sept. 30, 1949, there were 31 state prisons and 3 state reformatories. The total prison population was 4,922 and the reformatory population was 569. Prison expenditures for 1948–49 were $3,605,576.78 and reformatories $365,009.88.

Communications.—The state highway system consisted of 7,634 mi. of road, the county system had 52,579 mi. of road and there were approximately 4,000 mi. of municipal streets. For the fiscal year 1948–49 state expenditures for highways by the state highway department were $28,215,562. Estimated railroad mileage within the state was 5,300. There were 1,015 mi. of controlled civil airways, 60 mi. of noncontrolled and 2,441 mi. of off-airway direct air carrier routes. The number of active airports was 109 and inactive airfields numbered 11 (including those owned by the U.S. national military establishment). The tonnage of water-borne commerce in the state was estimated at 4,500,000. The approximate number of telephones was 385,000.

Banking and Finance.—On June 30, 1949, there were in Alabama 156 state banks and 1 branch, which had total deposits of $271,729,000 and total resources of $296,707,000; 69 national banks and 24 branches which had total deposits of $879,759,000 and total resources of $949,478,000. According to budgetary figures the state government receipts for 1948–49 were $83,027,560. Expenditures totalled $79,569,337 and $3,458,223 was transferred to surpluses; the gross state bonded indebtedness Sept. 30, 1949, was $46,879,000 and sinking funds totalled $16,863,000 with a net state indebtedness of $30,016,000.

Agriculture.—The total value of agricultural production in Alabama during 1948 was estimated at $618,360,000. This includes the value of crops produced in 1948 regardless of when they were used or sold plus the value of livestock and livestock products marketed. During 1948 crops were harvested from 5,873,000 ac. excluding duplications. Cash income from sale of crops was $296,043,000; sale of livestock and livestock products amounted to $130,210,000; income from government payments was $4,150,000.

Table I.—*Leading Agricultural Products of Alabama*

	1949	1948	Average 1938–47
Cotton, bales	865,000	1,197,000	901,000
Corn, bu.	57,456,000	58,824,000	43,596,000
Peanuts, lb.	289,075,000	354,710,000	281,976,000
Hay, tons	660,000	700,000	759,000
Sweet potatoes, bu.	4,565,000	4,505,000	5,709,000
Irish potatoes, bu.	3,432,000	3,640,000	4,382,000
Oats, bu.	4,230,000	5,750,000	4,500,000
Soybeans, bu.	1,037,000	1,100,000	266,000
Peaches, bu.	792,000	1,298,000	1,441,000
Sugar cane syrup, gal.	1,820,000	2,240,000	1,912,000

Manufacturing.—The 1948 total estimated value of manufactures in Alabama was $2,658,400,000. Persons employed totalled 229,400 and the yearly pay roll was $524,100,000. The primary metals industry employed 47,500 and the value of the product was $716,700,000; textiles employed 55,200 and the product value was $485,500,000; the lumber industry employed 44,900 and the product was valued at $303,900,000; food product industries employed 14,300 and the total value of products was $292,100,000.

Table II.—*Principal Mineral Products of Alabama*

Mineral	1948	1947	Value, 1947
Coal, tons	17,371,000	19,048,225	$104,303,000
Iron ore, tons	7,914,000	7,225,000	23,437,000
Cement, bbl.	9,912,000	9,514,000	16,664,000
Stone, tons	....	2,795,000	4,625,000

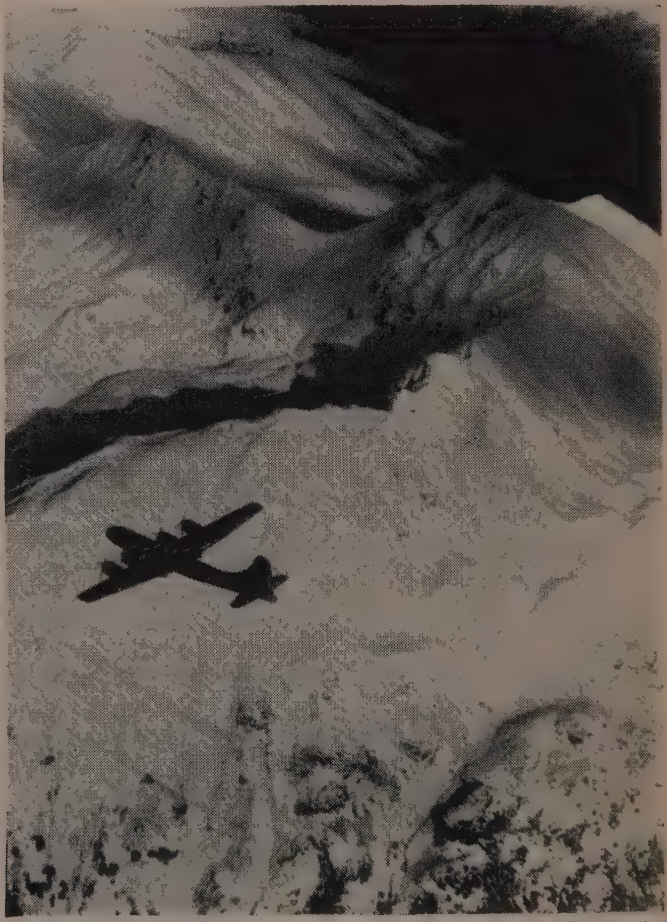
Minerals.—The total value of Alabama mineral production in 1947 was $159,788,000; in 1946 the value was $117,764,000. In 1949 there was no report of fields discontinued or new ones opened. A large and easily available salt deposit was discovered in Washington county but had not been mined. (J. E. Fm.)

Åland Islands: *see* Finland.

Alaska.

Alaska, the northernmost territory of the United States, is separated from Siberian U.S.S.R. by Bering strait. The boundary line runs between the Big Diomede Island, which is soviet soil, and the Little Diomede Island, which is on the U.S. side. These islands are about four miles apart. Alaska has an area of 586,400 sq.mi. and an estimated population in 1949 of 100,000, made up of about 60% whites and 40% Eskimos, Aleuts and Indians. The Aleutian Islands, a chain of small islands extending about 1,200 mi. westward from the extremity of the Alaskan peninsula, constitute part of the territory of Alaska. Juneau (1940 est. pop. 5,748) is the capital of Alaska, and other principal cities are Ketchikan (4,601), Anchorage (3,488), Fairbanks (3,304), Sitka (1,945), Petersburg (1,288), Nome (1,550), Wrangell (1,142) and Seward (1939 census, 949). Governor since 1939: Ernest Gruening; reappointed in 1949 for another four-year term.

History.—The territorial legislature met in a special session of 17 days and a regular biennial session of 60 days in 1949 and enacted the territory's first basic tax program consisting of an



ICE-LOCKED REACHES OF ALASKA being charted from the sky by a photo-reconnaissance crew of the U.S.A.F. in 1949. Vast areas of formerly unexplored terrain were being mapped out for military purposes in a survey that began in 1946 income tax, property tax and business licence tax. The income tax levies 10% of the amount the taxpayer pays the federal government under the internal revenue code; the property tax is 1% of the true and full value, with $200 exemption on personal property; and the business licence is $25 for any and all business enterprises, with a graduated levy on all gross receipts of more than $100,000. The legislature created a territorial department of fisheries and a department of aviation and established a national guard. It appropriated $17,279,000 for operation of the territory during the 1949–50 biennium. The anticipated revenue for the same period was $19,000,000.

Education.—The territory had 26 incorporated school districts and 58 rural schools in 1949, employing 549 teachers and with a student enrolment of 12,000. In addition, the Alaska native service of the department of the interior maintained 85 day schools and 3 boarding schools with a total enrolment of 5,000. The University of Alaska, at College, the territory's only institution of higher learning, farthest north U.S. college, had an enrolment of 330 in the 1949 fall term.

Defense.—Construction of defense installations was concentrated at key points in 1949. Late in the year announcement came from the military high command that ground troops would be withdrawn from the Aleutian Island chain although the air arm would be maintained. Lack of sufficient funds to rebuild the temporary installations made in the islands during World War II was given as the reason. Defense centred in air facilities, both from the military and civilian standpoint. The Civil Aeronautics authority maintains 54 facilities in the territory. The U.S. coast guard re-established a district in Alaska on July 1, 1949, with headquarters at Juneau. It patrols the 26,000 mi. of coast line with aeroplanes and cutters. The navy has its district headquarters at Kodiak.

Banking and Finance.—The territory had a cash balance of $1,558,457.93 as of Dec. 15, 1949, deposited with various banks. There were 17 territorial banks and 4 national banks. Total deposits in territorial banks in December were $42,312,811.69 and in the national banks $31,304,761.

Fisheries.—The 1949 fishery season was one of the best in Alaska history. The total pack of salmon was 4,375,147 cases, valued at $100,000,000. Southeast Alaska, with the largest catch in nine years, produced 2,511,274 cases. The halibut fishery produced 50,000,000 lb., valued at $10,000,000, and shrimp, crab and cod added more than $1,000,000 to the year's total yield.

Mining.—Gold production was still down from prewar years, but 1949 production was approximately $8,750,000, about the same as 1948. A new strike was made on the Yukon river northeast of Fairbanks near the Arctic circle in the fall of 1949, and claims were staked along the river for about 20 mi., hundreds of prospectors stampeding to the area. The real value of the strike would not be known until spring, as winter had closed down operations. Coal production ran about 400,000 tons, with price at the mines holding at $7.25 per ton. Production of silver, copper, lead and zinc approximated $160,000.

FILMS OF 1949.—*Alaska: Global Crossroads* (Flory Films, Inc.).

(L. M. W.)

Albania. A people's republic in the western part of the Balkan peninsula, Albania is bounded by Yugoslavia to the north and east and by Greece to the south, with an Adriatic coast of 200 mi. Area: 10,629 sq.mi.; only one-tenth of the total area is arable land (mainly the Adriatic littoral and the Korçë plain), about three-tenths being pasture and the rest forest, swamp and mountainous waste. Pop.: (1939 census) 1,063,000; (mid-1948 est.) 1,175,000. Chief towns (1946 est.): Tiranë (cap., 35,000); Scutari or Shkodër (30,000); Koritsa or Korçë (27,000); Elbasan (15,000). Language: besides the literary Albanian, there are two spoken dialects, the Gheg north of the river Shkumbi and the Tosk in the south. Religions (1946 est.): Moslem 800,000; Greek Orthodox 220,000; Roman Catholic 110,000. Chairman of the presidium of the People's Assembly, Omer Nishani; prime minister, Colonel General Enver Hoxha.

History.—Because of its strategic position Albania played an important role in soviet policy which attempted to retain influence in the western Balkans. Despite a series of crises the Communist government continued its submissive attitude to soviet direction. In June 1949 the hostile propaganda campaign against Marshal Tito of Yugoslavia reached its peak when, after a widespread purge of so-called Tito sympathizers, five members of the government were sentenced to various terms of imprisonment and the former deputy prime minister and minister of the interior, Koçi Xoxe was executed. Yugoslavia denounced its treaty of friendship and mutual aid with Albania in November.

Completely isolated and deprived of normal trade with its Balkan neighbours, Albania's economy became dependent on the Soviet Union. Albania was admitted to the Council for Mutual Economic Assistance on Feb. 22. From March 21 to April 10 Hoxha visited Moscow where negotiations resulted in an agreement whereby the U.S.S.R. would provide capital equipment for industrial development and large quantities of consumer goods. The five-year plan based on Yugoslav support, abandoned in 1948, was translated into a two-year plan on the soviet model. Albania, however, was not granted membership in the Cominform and remained the only satellite country without a treaty of mutual aid with the Soviet Union.

It became clear in July that the Soviet Union was more interested in supplying Albania in order to maintain the Greek rebel movement and increase the tempo of the nerve-war against Marshal Tito than to prevent the Albanian population from starving. As the Greek rebellion drew to its close, so the number of ships bringing transport and food, but not capital equipment, from soviet Black sea ports, rapidly diminished. The result was that the already poor economic situation became serious. There was famine in the south of the country and disease was rife in many towns. Large numbers of refugees crossed the frontier into Yugoslavia. Deserters to the Greek government forces reported dissension in the Albanian army. Responsibility for the internal disorder was pinned on the minister of industry, Gogo Nushi. He was arrested on the grounds of sabotage in October.

Although there was a marked decline of soviet interest in Albania in the last half of the year, a large soviet military mission was maintained in Tiranë and soviet technicians continued work on the harbour defenses at Vlorë (Valona) and Durrës (Durazzo).

In the report of the United Nations Special Committee on the Balkans, Albania was indicted as the principal source of material assistance to Greek Communists. This report, submitted to the general assembly, provided evidence to show that the Albanian armed forces had actively assisted the Greek rebels. Some 6,000 of them were given refuge in Albania when the civil war ended. All attempts by the United Nations to secure an understanding between Greece and Albania failed.

Education.—(1949) Elementary schools 1,909, pupils 162,000; higher elementary (145) and secondary (20) schools had a total of 19,000 pupils. A teachers' college was opened at Tiranë in 1946. In Aug. 1949 it was announced that there were 12 newspapers and 14 other periodical publications with a total circulation of 83,000.

Finance.—The monetary unit is the lek, which until June 1948 was at par with the Yugoslav dinar. In July 1949 a state loan of 250,000,000 leks, the first loan in Albanian history, was launched. On Oct. 1 all the banknotes of 1947 issue were withdrawn and replaced by new ones, but no information was published as to the amount of the currency circulation.

Transport and Communications.—Roads (1949): 2,842 km. Licensed motor vehicles (Dec. 1948): cars 500, commercial vehicles 1,240. Railways (1949): 100 km. Shipping (1949): number of merchant vessels 6 (including two sea-going ships purchased in 1949 from Poland).

Agriculture.—Main crops (in metric tons, 1947): maize 140,000; wheat 54,000. Livestock (1946 est.): sheep 1,548,000; cattle 345,000; horses 50,000; asses 40,000; mules 10,000; goats 854,000; pigs 35,000. The first 20 collective farms were organized during 1949. (S. E. Ws.)

Alberta. Most westerly of the three prairie provinces of Canada, Alberta was created by parliament in 1905. The area is 255,285 sq.mi., of which 6,485 sq.mi. are water; pop. (1941) 796,169, (1949 est.) 871,000. Largest city is Edmonton, provincial capital (1948: 126,809). Administered by a lieutenant governor, an executive council, and a 57-member legislative assembly, Alberta is federally represented by 17 members of parliament and 6 senators.

History.—The Alberta legislature had a busy year in 1949. It offered free hospitalization and treatment to arthritis sufferers, banned the sale of yellow-coloured margarine, reduced hours of work in coal mines from 48 to 40 per week, raised minimum weekly wages for women from $18 to $20, extended the workmen's compensation act to include the furniture-finishing industry, strengthened regulations for safety of oil-well drillers and brought the export of oil and gas under a petroleum and natural gas conservation board.

Education.—The department of education announced that the supply of teachers for the year 1949 was 300 to 400 below the 6,000 requirement. The latest available revised statistics for provincially controlled schools were for 1946: total enrolment, 155,455; average daily attendance, 133,162; teachers, 5,446; total revenue, $15,199,465.

Finance.—The 1949–50 provincial budget amounted to $66,659,000. Liquor revenues and amusement taxes were at their peak, and oil revenues reached an estimated $60,000,000 before the year's end. At the half-year mark there was an $11,953,431 provincial surplus, but increased spending during the second six months reduced it.

Agriculture.—Extended drought cut the expected 1949 crop returns, and summer-end hail storms that swept over 1,000,000 ac. further reduced harvests. The latter resulted in a $450,000 bill to insurance companies, which represented only about 10% of the actual losses. Cash income from the sale of farm products for the final half of 1949 was $207,250,000, compared with $165,720,000 for same 1948 period. Production values for 1948 were as follows: wheat, $152,950,000; other grains, $125,787,000; fodder, $32,430,000; root crops, $8,999,000; livestock, $140,000,000. Total agricultural production value was slightly more than $600,000,000, compared with $438,000,000 for 1947.

Industries.—There were general boom conditions throughout 1949, with 32 new industries started, largely resulting from the expansion of the oil resources. In April the provincial minister of economic affairs announced that total production was about $700,000,000 annually, with a trade turnover of $310,000,000 at wholesale levels and $450,000,000 at retail levels.

Minerals.—During 1949, eight companies having a total of 4,000 men in the field and spending about $100,000,000 had drilled into oil reserves totalling 1,000,000,000 bbl. worth an estimated $2,500,000,000. By November there were 1,000 producing wells pumping about 70,300 bbl. daily; the total for the year ran to about 20,000,000 bbl. (compared with 10,900,000 bbl. for 1948). New wells were constantly coming in, both near the 1948-discovered Redwater field and near the smaller Peace River field. Pumping was restricted pending better access to markets. Pipe-line construction was still not completed, though lines totalling more than 2,400 mi. and costing more than $275,000,000 were well along in the blueprint stages. Canada's biggest natural gas well was brought in at Pincher Creek with a daily capacity of 83,000,000 cu.ft. (*See* also CANADA, DOMINION OF.) (C. CY.)

Alcohol, Industrial.

In the United States, during the year 1948–49, production, withdrawals, and stock figures on industrial alcohol differed very little from the previous year in which production amounted to 166,141,074 wine gal. of 190 proof undenatured ethyl alcohol. Stocks were equal to about one-fourth of the year's production. Synthetic processes contributed 20% more than in the previous year, about 48% of the total, and molasses, formerly the chief source, 34%. Three large government-owned plants using grain and potatoes ceased operations during the year.

Prices were raised about ten cents per gallon July 1, and withdrawals were heavy prior thereto and lighter afterward, but demand and production increased after September and no further price rise was reported. The Economic Cooperation administration authorized substantial purchases by participating countries. (J. K. R.)

Alcoholic Foundation, Inc. (Alcoholics Anonymous): *see* SOCIETIES AND ASSOCIATIONS.

Alcoholic Intoxication: *see* INTOXICATION, ALCOHOLIC.

Alcoholic Liquor: *see* BREWING AND BEER; LIQUORS, ALCOHOLIC; WINES.

Alemán, Miguel

(1903–), president of Mexico, was born Sept. 29 in Sayula, Veracruz, Mexico. He studied at the National Preparatory school in Mexico City and later at the National University of Mexico, where he received his law degree in 1928. He was successively consulting attorney for the Mexican ministry of agriculture; judge of the federal court; senator from Veracruz; governor of that state (1936–40); and minister of the interior under Pres. Manuel Avila Camacho, whom he succeeded as president in 1946. During World War II and afterward, Alemán championed inter-American solidarity. His program as president included emphasis on education, industrialization, irrigation and the modernization of agriculture, source of income for 70% of the population. In 1949 his Party of Revolutionary Institutions won a sweeping victory in the July 3 election of delegates to the chamber of deputies. His government had effected the devaluation of the peso on June 17; and, in his state of the nation address on Sept. 1, Alemán told the new chamber of deputies that this action had saved Mexico from a crisis in foreign trade and from inflation. He pledged continued controls over prices and supplies of consumer goods and disclosed that the Bank of America had granted a $3,000,000 loan for a highway across the isthmus of Tehuantepec.

Aleutian Islands: *see* ALASKA.

Alfalfa: *see* HAY.

Algeria: *see* FRENCH UNION.

Alien Property, Office of: *see* FOREIGN INVESTMENTS.

Aliens.

United States.—By using the true figures for immigration and naturalization and estimating alien mortality for the period of registration, it is possible to arrive at the approximate alien population. On such a basis it is estimated that there were approximately 3,000,000 resident aliens in the continental United States on June 30, 1946. This estimate does not take into account persons there temporarily, that is, nonimmigrants, border crossers and imported labourers.

Naturalizations.—The number of noncitizens naturalized during the year ended June 30, 1949, was 66,594. This was the lowest number in 37 years. Included in the number naturalized were 35,131 persons naturalized who were married to United States citizens, and 2,456 persons who had served in the armed forces of the United States.

The principal countries of former allegiance, and classes under the Nationality act of 1940, were as reported below:

U.S. Noncitizens Naturalized during Year Ended June 30, 1949, by Countries or Regions of Former Allegiance

Country or region of former allegiance	Total	Persons naturalized: General Provisions	Persons naturalized: Spouses and children of U.S. citizens	Persons naturalized: Military	Persons naturalized: Other
All countries	66,594	24,566	35,579	2,456	3,993
Austria	1,194	586	554	31	23
British Empire	13,284	3,840	8,928	353	163
Canada	5,347	1,591	3,467	202	87
China	927	340	233	257	97
Czechoslovakia	1,284	579	661	32	12
France	1,658	383	1,222	23	30
Germany	5,777	2,613	2,986	95	83
Greece	1,638	691	820	97	30
Hungary	1,036	483	528	16	9
Ireland	1,370	558	789	17	6
Italy	8,301	3,183	4,774	188	156
Mexico	2,227	957	1,045	205	20
Philippines	3,478	245	178	310	2,745
Poland	4,371	2,197	2,035	99	40
Sweden	1,044	511	491	12	30
U.S.S.R.	2,752	1,261	1,430	40	21
Yugoslavia	809	380	382	30	17
Other countries	10,097	4,168	5,056	449	424

Throughout the year 2,271 petitions for naturalization were denied. Almost two-thirds were denied for want of prosecution, 61 were denied by the courts for failure to establish attachment to the principals of the constitution and proper disposition to the good order and happiness of the United States and 233 were denied to persons for lack of good moral character. There were 184 judgments of naturalization revoked and certificates of naturalization cancelled during the year. In 179 cases the foreign service of the department of state initiated action because naturalized citizens of the United States became permanent residents of foreign countries within five years after naturalization. In five cases the immigration and naturalization service initiated action because naturalization was otherwise fraudulently or illegally procured.

There were 8,575 persons who lost United States nationality during the year 1948–1949: 4,515 by voting in a foreign political election or plebiscite, 1,459 by entering or serving in the armed forces of a foreign state, 754 through naturalization in a foreign state, 694 naturalized citizens through prolonged residence in a foreign state and 1,153 who lost United States nationality for other reasons.

Petitions for naturalization were filed by 71,044 persons, an increase of 4.1% from the fiscal year 1948, when 68,265 petitions were filed.

Alien Enemies.—At the beginning of the fiscal year 1949 there were 174 continental Germans and 27 continental Japanese still under orders of removal issued by the attorney general, pursuant to the presidential proclamation of July 14, 1945. Of the Germans, 75 departed or were removed from the United States during the fiscal year as the result of the supreme court decision in the case of *Kurt G. W. Ludecke* v. *W. Frank Watkins* handed down on June 21, 1948, upholding the right of the government to remove or deport under the Alien Enemy act of 1798 interned alien enemies deemed by the attorney general to be dangerous because they had adhered to an enemy government or to the principles thereof; 58 were released outright; 3 were released by court order; and 6 were paroled pending further administrative determination of their cases. In view of the decision handed down by the supreme court in the case of *Klapprott* v. *United States,* execution of removal orders was deferred in the 29 denaturalization cases remaining for further administrative consideration. Only 3 continental Germans were still detained at Ellis Island at the close of the fiscal year.

New Legislation.—The only act of major importance to the service which was passed by the 80th congress during the fiscal year was public law 863 of July 1, 1948. This act amended section 19(c) of the Immigration act of 1917 in several major respects. Under the new law, suspension of deportation by the attorney general was authorized even though an alien was racially ineligible to citizenship. The law also permitted such suspension in the cases of aliens who had resided continuously in the United States for seven years or more and who were residing there on July 1, 1948. The other important change in section 19(c) changed the procedure to be followed by the congress in approving suspension of deportation cases. Affirmative, rather than negative, action was required before such cases might finally become effective. There was a provision for protecting small quotas by providing that in the future no quota should be reduced by more than 50% in any one year.

During the first session of the 81st congress three bills affecting service activities were passed prior to the close of the fiscal year. The first was public law 51 of April 21, 1949. This act authorized U.S. foreign service officials to complete the processing of cases pending in their offices on Dec. 31, 1948, involving alien fiancés and fiancées of certain U.S. citizens who had applied to come to the United States under the special terms of public law 471 of the 79th congress, as amended and extended. The new act required that the citizen and his or her prospective alien spouse must have personally met, and that the alien must arrive at a port of entry with a valid visa within five months after April 21, 1949. Provision was made in the act to permit such aliens to become permanent residents after marriage.

Public law 110 of June 20, 1949, provided for administration of a Central Intelligence agency established pursuant to the National Security act of 1947. Section 8 of the act authorized the entry into the United States during each fiscal year of not to exceed 100 aliens for permanent residence without compliance with the immigration laws. These persons were to be chosen upon a finding by the director of the Central Intelligence agency, the attorney general, and the commissioner of immigration and naturalization that the entry of such aliens was in the interest of the national security or essential to the furtherance of the national intelligence mission.

Public law 140 of June 29, 1949, merely corrected a typographical error in section 324A of the Nationality act of 1940 (public law 567, 80th congress, 2nd session). (*See* also LAW.)

(W. B. MI.)

Great Britain.—The number of aliens registered in Great Britain Oct. 1, 1949, was 429,342 (males 273,323; females 156,019). The figure on Jan. 1 was 410,600. The principal nationalities represented and the numbers of each compared with those in parentheses at approximately the same date in 1948 were: Austrian, 11,034 (11,254); Belgian, 6,467 (8,241); Chinese, 9,367 (9,309); Czechoslovakian, 7,207 (6,837); Danish, 5,145 (4,753); Dutch, 9,158 (9,456); Estonian, 5,816 (6,025); French, 14,087 (13,019); German, 44,249 (42,252); Hungarian, 5,536 (5,155); Italian, 18,667 (17,680); Latvian, 13,855 (13,723); Lithuanian, 7,165 (7,355); Norwegian, 5,868 (5,585); Polish, 150,378 (136,336); Russian, 40,785 (36,254); Swiss, 13,107 (12,063); U.S.A., 16,656 (14,967). The figures included 13,000 aliens to whom no nationality could be attributed.

The flow of foreign passenger traffic through United Kingdom ports continued to be heavy and in July 1949 101,768 aliens entered the United Kingdom and 84,076 departed; similar figures in July 1948 were 111,553 and 74,149. As a result of agreements concluded in and before 1949 nationals of the following countries were absolved from obtaining visas for travel to the United Kingdom: Belgium, Denmark, France, Iceland, Italy, Liechtenstein, Luxembourg, Monaco, the Netherlands, Norway, San Marino, Sweden, Switzerland and the United States.

The settlement of Poles for whom the British government assumed responsibility proceeded in 1949 and by Sept. 30 the Polish Resettlement corps had been wound up. By then, out of the 174,000 Polish servicemen brought to the United Kingdom after mid-1945, 61,500 had been repatriated and 17,000 assisted to emigrate. Of the remainder 1,000 had died, 94,500 had been settled in civilian life in Great Britain and 31,000 persons dependent on them had been brought from abroad to join them.

Between Jan. 1 and Oct. 1, 1949, 5,610 new applications for naturalization were lodged, compared with a yearly average of 1,708 before World War II. Certificates granted during the same period numbered 7,731, an annual rate of naturalization of approximately 10,300 as against 15,500 in 1948. Among the other effects of the British Nationality act, 1948, which came into operation on Jan. 1, 1949, was that British women who had lost their British nationality by marriage before that date regained it; the statutory qualifications for British-protected persons seeking naturalization was reduced and such persons were exempted from the provisions of the Aliens Restriction acts; and foreign women ceased to acquire British nationality automatically on marriage to a British subject but became eligible to secure it by applying for registration as citizens of the United Kingdom and colonies. (T. G. W.)

Alimentary System, Disorders of.

Oesophagus.—Increasing interest was manifested during 1949 in oesophagitis, an inflammation of the gullet which gives rise to heartburn, pain and dysphagia. The oesophagus does not have the resistance to acid that the stomach and duodenum have, but there is a mechanism at the inlet of the stomach (cardia) which normally prevents acid from reaching it. Failure of this mechanism will allow acid to reach the oesophagus, and in time this inevitably leads to inflammation and ulceration. According to Allison, the four stages of oesophagitis are inflammation, inflammation with acute ulcer, inflammation with chronic ulcer and healed fibrous stenosis. In the presence of a diaphragmatic hernia such inflammation causes shortening of the oesophagus as well as stricture.

Cancer of the oesophagus had formerly been considered a hopeless disease. Since the successful resection of the upper portion of the stomach (cardia) with restoration of continuity by W. E. Adams and D. B. Phemister in 1938 the scope of operations for oesophageal cancer had been extended so that the entire oesophagus could be removed and direct continuity satisfactorily reestablished. The over-all surgical mortality in 1949 was between 10% and 20%.

Stomach and Duodenum.—Stewart Wolf and H. G. Wolff in 1948 had summarized the results of their extensive investigations concerning emotional disturbances and their bearing on gastric dysfunction. In general the patterns of disturbance were characterized either by overfunctioning or underfunctioning of the stomach. The former was found to be associated frequently with symptoms characteristic of peptic ulcer: heartburn, gnawing epigastric pain, especially when the stomach was empty, and which usually was relieved by taking food, milk or alkalies. Gastric hypoactivity, on the other hand, was found to be accompanied by sensations of epigastric fullness and nausea.

Investigations showed that the average volume of nocturnal gastric secretion and the average output of hydrochloric acid are highest in patients with duodenal ulcer. There is no significant difference in the average volume secreted by patients with benign gastric ulcer and by normal people. In fact, the concentration and output of hydrochloric acid is actually somewhat lower in patients with gastric ulcer. These observations have a definite bearing on treatment. The decline in mortality after massive haemorrhage from the stomach or duodenum was attributed largely to liberal transfusions of blood and early feeding which control shock, tissue anoxia that is often irreversible and eventually fatal, dehydration, excessive accumulation of urea in the blood and acute malnutrition. As a result patients were much more able to withstand further haemorrhages.

An article by T. L. Althausen published in 1949 on the prevention of recurrences of peptic ulcer after medical treatment was characteristic of numerous contributions on this important phase of treatment of ulcers, which had been insufficiently stressed in the past. Factors predisposing to reactivation or recurrence are emotional tension, physical fatigue, respiratory infection, alcohol, tobacco, condiments, caffeine-containing beverages, stimulating or coarse foods and hurried, improper mastication. The institution of a protective regimen during periods of stress or former seasonal exacerbations was emphasized. Continued co-operation with respect to diet, medication and hygiene was usually achieved only by fully acquainting the patient with the nature of the disease and the rationale underlying treatment. Favourable results continued to be reported by proponents of vagotomy (cutting of both vagus nerves) in the treatment of chronic ulcer of the stomach and duodenum. Many U.S. surgeons felt that vagotomy, as an exclusive primary procedure, should be abandoned.

Subtotal gastric resection still remained the method of choice for duodenal ulcer. Vagotomy was recommended especially for patients who previously had undergone operations such as pyloroplasty, gastro-enterostomy or gastric resection, and who later had recurrent ulceration, particularly anastomotic ulcers. For patients considered to be good postoperative risks, many surgeons preferred to excise or resect the recurrent ulcer at the time vagotomy was performed.

Liver and Gall Bladder.—The advantage and safety of needle biopsy of the liver in competent hands was increasingly apparent. Combined biopsy and tests of hepatic function were most illuminating even though the results from the respective investigations did not always parallel each other. Such combined procedure, plus thorough clinical study, represented distinct progress in the diagnosis and treatment of hepatobiliary disease. M. W. Comfort, H. K. Gray and J. M. Wilson reported observations on 112 patients who had asymptomatic gallstones found incidentally during the course of abdominal operations. Follow-up data on these patients for 10 to 20 yr. revealed that indigestion supervened in 30, biliary colic in 21 and both jaundice and colic in 5. The remainder, exactly half the total, continued to be asymptomatic. The authors concluded that surgical treatment for silent gallstones may be classified as optional. Surgery should not be postponed, however, especially after colic occurs.

Intestines.—The investigations of T. P. Almy and associates confirmed the important role of emotional stress in the alteration of colonic function, similar in kind and degree to those alterations seen in patients with irritable colon. In a review of 726 consecutive cases of diverticulum of the colon, F. H. Goodwin and E. N. Collins noted the following features: aetiology was unknown; the site of predilection in the majority was the sigmoid colon; three-fourths of the patients were 50 years of age or older, two-thirds were overweight; and symptoms, signs and mode of treatment were similar to those of irritable colon. Other observers estimated that diverticulitis would develop in 10% to 20% of cases of diverticulosis. Medical management was indicated for a large majority of the patients during an attack of diverticulitis as well as before operation.

BIBLIOGRAPHY.—T. L. Althausen, "Prevention of Recurrences in Peptic Ulcer," *Ann. Int. Med.*, 30:544–559 (March 1949); M. W. Comfort, H. K. Gray and J. M. Wilson, "The Silent Gallstone: a Ten to Twenty Year Follow-up Study of 112 Cases," *Ann. Surg.*, 128:931–937 (Nov. 1948); F. H. Goodwin and E. N. Collins, "Diverticulosis of the Colon: Review of 726 Consecutive Cases," *Cleveland Clin. Quart.*, 15:194–201 (Oct. 1948); Stewart Wolf and H. G. Wolff, "Life Situations, Emotions and Gastric Function: A Summary," *Am. Pract.*, 3:1–14 (Sept. 1948).

(G. B. EN.)

Allergy.

Investigations in 1949 helped clarify obscure allergic causes of both respiratory and abdominal symptoms. R. L. Mayer sensitized guinea pigs with paraphenylene diamine, a common dye. When the pigs were tested with related dyes commonly used to colour foods, some of the animals were found to be sensitive. The author concluded that occasionally obscure cases of symptoms may be due to materials used to colour foods artificially. H. H. Gelfand found that sensitivity to the gums of acacia, karaya or tragacanth, used as fillers or stabilizers in such common foods as pies, cream cheese, whipped cream preparations, candies, mayonnaise and many other foods may be a cause of asthma, hives or abdominal distress.

H. S. Bernton, E. J. Coulson and H. Stevens found in a careful study of two patients who were sensitive to cottonseed protein, that ingestion of cottonseed oil failed to produce symptoms. The report threw doubt on the view held by some allergists that patients sensitive to the water soluble protein of cottonseed could not tolerate the oil so commonly used as a food.

A new approach to the study of various types of arthritis from an allergic point of view was offered by the experimental work of L. M. Kopeloff and N. Kopeloff. They injected antigens in an adjuvant oil emulsion in the back of the neck of guinea pigs. Simultaneously they injected the antigen without any adjuvant near the joint of one hind foot. Most animals developed a swollen joint in the injected foot between the 9th and 20th day after the injection. The authors suggested that this method be applied to the study of bacteria as a cause of arthritis.

Symptoms of typical gout may be precipitated by sensitivity to foods or pollens according to J. Harkavy, who was able to reproduce attacks of gout in three patients by exposing them to the foods or pollens to which they were sensitive.

In the field of therapy several contributions served to emphasize the dangers to the allergic patient of helpful or even essential drugs. H. H. Rivers, B. B. Ward and M. L. Hicks reported the death of a 16-mo.-old girl who accidentally swallowed 100 mg. (adult dose) of thenylene hydrochloride, one of the antihistaminic drugs. S. A. Wolfson reported urinary obstruction caused by spasm of the sphincter of the bladder in a man after four one-tablet doses of pyribenzamine, another of the antihistaminic remedies. The patient recovered after stopping the drug. While the danger of penicillin administration to those sensitive to this important antibiotic had been previously emphasized, the report by G. L. Waldbott of sudden anaphylactic death following its injection served as an added warning of caution in the use of even an essential drug in allergic patients. To these two observations was added the report by W. R. Coppinger and M. G. Goldner of a sudden death caused by hypersensitivity following the intravenous injection of a digested protein in a patient who required such treatment after an operation. This serious result occurred despite the rarity of sensitivity to protein digests.

In a study of a new antihistamine, dramamine, L. N. Gay and P. E. Carliner found the drug ineffective for the relief of hay fever, but curiously potent as a preventive or relief for motion sickness. When administered under various trial conditions to soldiers in an army transport crossing the Atlantic in rough seas, the drug prevented seasickness for almost all who used it. It relieved the condition within one-half hour after its administration in those who had not previously received a protective dose.

The experimental extract of the pituitary gland commonly known as ACTH was used on five patients with severe asthma by J. E. Bordley and co-workers. All five patients were relieved in 4 to 48 hr. The authors did not state the duration of relief; however, other indications were that relief lasts for no longer than two weeks. Furthermore, ACTH was still a potentially dangerous material, available only in minute quantities and only for experimental use.

Bibliography.—L. M. Kopeloff and N. Kopeloff, "A Delayed Chronic Inflammatory Reaction at an Antigen Depot in the Guinea Pig, Effected by Systemic Sensitization," *J. Immunol.*, 62:363–374 (Aug. 1949); J. E. Bordley, R. A. Carey, A. M. Harvey, J. E. Howard, A. A. Kattus, E. V. Newman and W. L. Winkenwerder, "Preliminary Observations on the Effect of Adrenocorticotropic Hormone (ACTH) in Allergic Diseases," *Bull. Johns Hopkins Hosp.*, 85:396–398 (Nov. 1949). (B. Z. R.)

TRACTOR-DRAWN SPRAYER laying down a 2,4-D barrage over ragweed in St. Louis, Mo., during a city-sponsored campaign to relieve the suffering of hay-fever victims in 1949

Allied Council for Japan: *see* Japan.

Alloys: *see* Metallurgy; Nickel.

Almonds: *see* Nuts.

Aluminum.

Although world production of aluminum in 1948 increased one-sixth over 1947, to more than double the 1939 total, it was still only 65% of the war peak of 1943. The outputs of the major producing countries and the world totals during recent years are shown in Table I.

Table I.—*World Production of Aluminum*

(In thousands of short tons)

	1942	1943	1944	1945	1946	1947	1948
Austria . .	38.7	48.6	44.3	5.8	1.1	5.0	14.7
Canada . .	340.6	495.8	462.1	215.7	193.4	296.1	367.1
France . . .	49.7	51.2	28.8	41.0	52.9	58.6	71.4
Germany . .	250.4	223.8	210.2	22?	...	?	8.0
Great Britain	52.3	62.3	39.7	35.7	35.4	32.4	33.6
Italy	50.0	50.8	18.5	4.8	12.2	27.6	36.5
Japan . . .	93.9	125.7	97.3	18.1	3.5	3.0	7.7
Norway . .	22.6	25.9	22.1	5.1	18.4	23.9	33.1
Switzerland .	26.1	20.4	10.7	5.5	14.4	20.7	20.9
U.S.S.R. . .	60.6	68.7	78.3	95.1	115.7	132.3	154.3
United States	521.1	920.2	776.4	495.1	409.6	571.8	623.5
Others . . .	38.7	60.8	5.8	14.0	16.4	23.5	23.6
Total . .	1,545.0	2,152.0	1,844.2	957.9	873.0	1,194.9	1,394.4

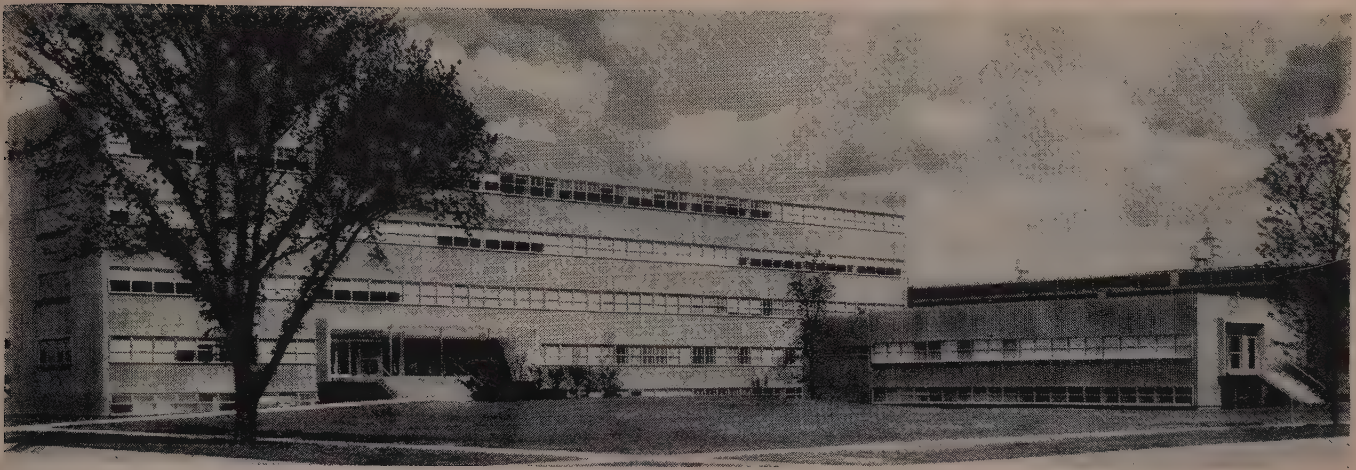
The bulk of the increase was in Canada and the United States, which supplied respectively 26% and 45% of the total and together accounted for 62% of the increased output of 1948.

United States.—Demand for aluminum was increasing steadily and until the latter half of 1949 supplies had not been too plentiful. The more important features of the industry, as re-

Table II.—*Data of Aluminum Industry in U.S.*

(In thousands of short tons)

	1943	1944	1945	1946	1947	1948
Production, primary . .	920.2	776.4	495.1	409.6	571.8	623.5
Imports.	135.6	100.9	334.1	42.6	15.6	83.8
Exports.	117.6	188.1	5.9	16.7	62.3	47.9
Producers' stocks. . .	+60.8	−55.3	+28.8	−11.6	+0.8	+2.5
Available new supply .	877.4	744.6	794.7	461.9	524.2	661.9
Secondary recovery .	314.0	325.6	298.4	278.1	344.8	286.8
Total supply.	1,191.4	1,070.1	1,093.1	724.2	869.0	948.7



THIN-WALLED ALUMINUM OFFICE BUILDING completed at Davenport, Ia., in June 1949, to serve as administration centre for the newly built 52-ac. sheet and plate rolling mill of the Aluminum Company of America

ported by the U.S. bureau of mines, are shown in Table II.

While the production rate was advanced appreciably during the first half of 1949, strikes in several of the plants cut output in the second half. The total output through Oct. 1949 was 526,436 tons, and the total for the year was expected to be about the same as in 1948.

(G. A. Ro.)

Ambassadors and Envoys.

The following is a list of ambassadors and envoys to and from the United States, Jan. 1, 1950.

To the United States	Country	From the United States
*Naim, H.R.H. Sardar Mohammad	Afghanistan	*Dreyfus, Louis G., Jr.
*Remorino, Jerónimo	Argentina	*Griffis, Stanton
*Makin, Norman J. O.	Australia	*Jarman, Pete
Kleinwaechter, Ludwig	Austria	Erhardt, John G.
	Belgian Congo	Beach, William H.[1]
*Silvercruys, Baron	Belgium	*Murphy, Robert D.
*Martinez Vargas, Don Ricordo	Bolivia	*Florman, Irving
*Nabuco, Mauricio	Brazil	*Johnson, Herschel V.
†Voutov, Peter	Bulgaria	Heath, Donald R.
*Nyun, U So	Burma	*(Vacancy)
*Wrong, Hume	Canada	*Steinhardt, Laurence A.
*Corea, G. C. S.	Ceylon	*Satterthwaite, Joseph C.
*Nieto del Río, Félix	Chile	*Bowers, Claude G.
*Koo, V. K. Wellington	China	*Stuart, J. Leighton
*Zuleta-Angel, Don Eduardo	Colombia	*Beaulac, Willard L.
*Esquivel, Don Mario A.	Costa Rica	*Flack, Joseph
*Gans, Oscar	Cuba	*Butler, Robert
*Outrata, Vladimir	Czechoslovakia	*Briggs, Ellis O.
*Kauffmann, Henrik de	Denmark	*Anderson, Eugenie
*Thomen, Luis Francisco	Dominican Rep.	*Ackerman, Ralph H.
*Dillon, Don Augusto	Ecuador	*Simmons, John F.
*Abdul Rahim, Mohamed Kamil	Egypt	*Caffery, Jefferson
*Castro, Don Héctor David	El Salvador	*Shaw, George P.
Kaiv, Johannes[2]	Estonia	(Legation at Tallinn closed)
*Imru, Ras H. S.	Ethiopia	*Merrell, George R.
Jutila, K. T.	Finland	(Vacancy)
*Bonnet, Henri	France	*Bruce, David K. E.
	Germany	McCloy, John J.[3]
*Franks, Sir Oliver Shewell	Great Britain	*Douglas, Lewis W.
*Dendramis, Vassili G.	Greece	*Grady, Henry F.
*Goubaud-Carrera, Don Antonio	Guatemala	*Patterson, Richard C., Jr.
*Charles, Joseph D.	Haiti	*DeCourcy, William E.
*Valle, Don Rafael Heliodoro	Honduras	*Bursley, Herbert S.
Horváth, Imre	Hungary	Davis, Nathaniel P.
Thors, Thor	Iceland	Lawson, Edward B.
*Pandit, Mme. Vijaya Lakshmi	India	*Henderson, Loy W.
	Indonesia	*Cochran, H. Merle
*Ala, Hussein	Iran	*Wiley, John C.
*Bakr, Abdullah Ibrahim	Iraq	*Crocker, Edward S., 2nd
Nunan, Sean	Ireland	Garrett, George A.
*Elath, Eliahu	Israel	*McDonald, James Grover
*Tarchiani, Alberto	Italy	*Dunn, James Clement
	Japan	Sebald, William J.[4]
Haikal, Yusuf	Jordan	(Vacancy)
*Chang, John Myun	Korea	*Muccio, John J.
Feldmans, Jules	Latvia	(Legation at Riga closed)
Malik, Charles	Lebanon	Pinkerton, Lowell C.
*King, Charles D. B.	Liberia	*Dudley, Edward R.
Žadeikis, Povilas	Lithuania	(Legation at Kaunas closed)
Le Gallais, Hugues	Luxembourg	Mesta, Perle
*Colina, Don Rafael de la	Mexico	*Thurston, Walter
	Morocco	Plitt, Edwin A.[5]
Shanker, ShumShere Jung Bahadur Rana, Gen.[6]	Nepal	Henderson, Loy W.[7]
*Kleffens, E. N. van	Netherlands	*Chapin, Selden
*Berendsen, Sir Carl	New Zealand	*Scotten, Robert M.
*Sevilla-Sacasa, Don Guillermo	Nicaragua	*Waynick, Capus M.
*Munthe de Morgenstierne, Wilhelm	Norway	*Bay, Charles Ulrick
*Ispahani, M. A. H.	Pakistan	*Warren, Avra M.
	Palestine	*Gibson, Raleigh A.[1]
Chevalier, Don Eugenio J.[8]	Panamá	*Davis, Monnett B.
*Boettner, Don Luís Oscar	Paraguay	*Warren, Fletcher
*Berckemeyer, Don Fernando	Peru	*Tittmann, Harold H., Jr.
*Elizalde, Joaquin M.	Philippines, Republic of the	*Cowan, Myron Melvin
*Winiewicz, Jozef	Poland	*Gallman, Waldemar J.
*Theotónio Pereira, Pedro	Portugal	*MacVeagh, Lincoln
Magheru, Mihai	Rumania	Schoenfeld, Rudolf E.
*Al-Faqih, Sheikh Asad	Saudi Arabia	*Childs, J. Rives
*Jooste, G. P.	South Africa, Union of	*(Vacancy)
Propper de Callejón, Don Eduardo[9]	Spain	*(Vacancy)
*Boheman, Erik	Sweden	*Matthews, H. Freeman
Bruggmann, Charles	Switzerland	Vincent, John Carter
El-Khouri, Faiz	Syria	Keeley, James Hugh, Jr.
*Waithayakon, H.R.H. Prince Wan	Thailand	*Stanton, Edwin F.
*Erkin, Feridun C.	Turkey	*Wadsworth, George
*Panyushkin, Alexander S.	U.S.S.R.	*Kirk, Adm. Alan G.
*Domínguez-Cámpora, Alberto	Uruguay	*Ravndal, Christian M.
*Pocaterra, Don José Rafael	Venezuela	*Donnelly, Walter J.
	Yemen	Childs, J. Rives[10]
*Kosanovic, Sava N.	Yugoslavia	*Allen, George V.

*Ambassador. Unstarred—Minister.
†Chargé d'affaires ad interim.
[1] Consul general.
[2] Acting counsul general.
[3] U.S. high commissioner and chief of mission.
[4] Acting U.S. political adviser with the rank of minister plenipotentiary.
[5] Diplomatic agent and consul general with the personal rank of minister.
[6] Resident in London, Eng.
[7] Resident in New Delhi, Ind.
[8] Minister counsellor.
[9] Minister plenipotentiary, chargé d'affaires ad interim.
[10] Resident in Jidda, Saudi Arabia.

American Academy of Arts and Letters: *see* SOCIETIES AND ASSOCIATIONS.

American Academy of Political and Social Science: *see* SOCIETIES AND ASSOCIATIONS.

American Association for the Advancement of Science: *see* SOCIETIES AND ASSOCIATIONS.

American Association of Law Libraries: *see* SOCIETIES AND ASSOCIATIONS.

American Association of University Professors: *see* SOCIETIES AND ASSOCIATIONS.

American Association of University Women: *see* SOCIETIES AND ASSOCIATIONS.

American Bankers Association: *see* SOCIETIES AND ASSOCIATIONS.

American Bar Association: *see* SOCIETIES AND ASSOCIATIONS.

American Bible Society: *see* SOCIETIES AND ASSOCIATIONS.

American Chemical Society: *see* SOCIETIES AND ASSOCIATIONS.

American Citizens Abroad.

The number of U.S. citizens residing abroad in 1949 was 383,542, an increase of nearly 50,000 over the previous year and 75,000 more than were residing abroad during 1941. The usual number of businessmen and their families and persons engaged in professional or other activities such as pleasure, health or family needs continued to make up this group. There was an increase in the number of students and teachers residing abroad, largely because of the stimulation given this type of sojourn by the Fulbright act and the Economic Cooperation administration. Also, there was an increase in the number of employees of the government service following extension of the Economic Cooperation administration program and certain new activities in connection with the Marshall plan and the North Atlantic treaty. There was a noticeable increase in the number of Americans proceeding abroad for short sojourns, the numbers limited only by the scarcities of air and ship space during the months deemed most desirable for travel.

At the end of the year 1949, the U.S. colony in China was reduced to something less than 3,000 people, many of whom were prepared to leave as soon as exit permits were obtainable. Many who left China during 1949 did not return to the United States but remained in the far east awaiting a clarification of the conditions surrounding the life of foreigners in China under the new Communist regime.

Registration of Americans residing abroad was greater than that of the normal American foreign colonies in the pre-World War II days.

Restrictions concerning travel of U.S. businessmen in Japan were modified during 1949 to permit the permanent residence of those whose business requires that they make more than a temporary stay. Many of the businessmen formerly engaged in trade with Japan took advantage of this, as did many persons who had learned of the trade opportunities through temporary visits and during the occupation. The U.S. colony in Japan showed a great increase, largely because of dependents joining persons stationed there on military or civil government assignments.

Detailed figures on U.S. citizens abroad in 1949, by countries, are as follows:

South America		
Argentina	4,148	
British Guiana	373	
Bolivia	686	
Brazil	7,913	
Chile	2,031	
Colombia	4,459	
Ecuador	786	
Paraguay	328	
Peru	3,900	
Surinam	43	
Uruguay	629	
Venezuela	11,013	
Total		36,309
Mexico and Central America		
British Honduras	151	
Costa Rica	1,250	
El Salvador	560	
Guatemala	1,698	
Honduras	624	
Mexico	25,755	
Nicaragua	700	
Panama	5,104	
Total		35,842
Canada and Newfoundland		120,853
West Indies and Bermuda		
Aruba	1,761	
Barbados	495	
Bermuda	1,244	
Cuba	3,410	
Curaçao	152	
Dominican Republic	4,504	
Haiti	766	
Jamaica	1,044	
Martinique	13	
Nassau	306	
Trinidad	705	
Total		14,400
Europe		
Austria	4,496	
Belgium	2,029	
British Isles	9,988	
Bulgaria	94	
Cyprus	167	
Czechoslovakia	1,351	
Denmark	1,388	
Finland	698	
France	10,618	
Germany	3,253	
Gibraltar	4	
Greece	7,074	
Hungary	200	
Ireland	6,332	
Italy	15,765	
Lebanon	1,537	
Luxembourg	93	
Netherlands	1,140	
Norway	2,253	
Poland	210	
Europe—continued		
Portugal, incl. Azores	4,563	
Rumania	373	
Spain and Canary Islands	2,884	
Sweden	2,433	
Switzerland	3,253	
U.S.S.R.	666	
Yugoslavia	1,025	
Total		83,387
Africa		
Accra	146	
Algeria	137	
Angola	75	
Belgian Congo	1,100	
Dakar	293	
Egypt	1,649	
Ethiopia	372	
Lagos	814	
Liberia	525	
Libya	15	
Mombasa	700	
Morocco	437	
Mozambique	62	
Nairobi	575	
Tananarive	63	
Tunisia	86	
Union of South Africa	2,333	
Total		9,382
Asia		
Aden	15	
Afghanistan	277	
Burma	240	
Ceylon	117	
China	4,788	
French Indochina	97	
Hong Kong	894	
India	3,273	
Indonesia	564	
Iran	540	
Iraq	900	
Japan	45,636	
Korea	907	
Malaya	127	
Pakistan	314	
Palestine	650	
Saudi Arabia	372	
Siam	422	
Singapore	44	
Syria	383	
Turkey	1,176	
Total		61,736
New Caledonia		41
Philippines		16,376
Australia and New Zealand		
Australia	3,036	
New Zealand	817	
Total		3,853
Grand Total		383,542

(R. B. S.)

American College of Dentists: *see* SOCIETIES AND ASSOCIATIONS.

American College of Life Underwriters: *see* SOCIETIES AND ASSOCIATIONS.

American College of Surgeons: *see* SOCIETIES AND ASSOCIATIONS.

American Dental Association.

Total membership in the American Dental association reached a new high of 75,267 in 1949, a net gain of 3,441 over the preceding year. The increase was recorded in student and life membership classifications. Active membership totalled 65,551, about 1% below the total for the previous year.

Among major activities of the association and its 487 state and local dental societies were the inauguration of programs designed to raise the level of dental health in the United States. The association's house of delegates unanimously adopted a statement of principles for the development of community, state and national dental health programs to carry out this objective. This statement, which reiterated the association's objection to the establishment of a national system of compulsory health insurance, urged the development and expansion of community health programs to make dental care available to every child. The statement recommended that children be given a priority over adults for dental health services.

The association also joined with the American Medical association (*q.v.*) and four other national professional organizations in the formation of the Inter-Association Committee on Health.

In February, the association inaugurated the first National Children's Dental Health day designed to stimulate both public and professional interest in making dental health education and care available to all children. The association also increased its output of dental health education material, distributing more than 1,000,000 pamphlets and brochures and numerous motion pictures and other visual aids to schools, public and private agencies and individuals.

The association continued its support of a number of research projects and appropriated an additional $20,000 for a special study of the physical and chemical properties of enamel to be conducted at the U.S. bureau of standards. It also authorized the creation of a new specialty board for oral pathologists, increasing to six the number of recognized dental specialties.

One additional dental school was founded during the year in Alabama and plans were completed for the opening of a new dental school in North Carolina in 1950, bringing the total number of dental schools in the United States to 42. Of these, 39 had been approved, either in full or on a provisional basis, by the association Council on Dental Education.

Officers of the association for 1949–50 were: president, Philip E. Adams, Boston, Mass.; president-elect, Harold Oppice, Chicago, Ill.; secretary, Harold Hillenbrand, Chicago; and treasurer, H. B. Washburn, St. Paul, Minn.

The 90th annual scientific and business session of the association was held at San Francisco, Calif., on Oct. 17 to 20, with a record attendance of 11,000.

The 91st annual session of the association was to be held Oct. 30 to Nov. 2, 1950, at Atlantic City, N.J.

(H. B. Bn.)

American Economic Association: *see* Societies and Associations.

American Federation of Labor: *see* Labour Unions.

American Geographical Society: *see* Societies and Associations.

American Historical Association: *see* Societies and Associations.

American Indians: *see* Indians, American.

American Institute for Property and Liability Underwriters, Inc.: *see* Societies and Associations.

American Institute of Accountants: *see* Societies and Associations.

American Institute of Chemical Engineers: *see* Societies and Associations.

American Institute of Electrical Engineers: *see* Societies and Associations.

American Institute of Mining and Metallurgical Engineers: *see* Societies and Associations.

American Iron and Steel Institute: *see* Societies and Associations.

American Law Institute: *see* Societies and Associations.

American Legion: *see* Veterans' Organizations.

American Library Association. The oldest professional association in the world of librarians and others interested in educational, social and cultural responsibilities of libraries, the American Library association (A.L.A.) is the official organization of librarians in the United States and Canada. Established on Oct. 6, 1876, in Philadelphia, Pa., the A.L.A. had a membership in 1949 of about 20,000 in the U.S. and possessions, Canada and 50 foreign countries. It is affiliated with more than 60 other library associations throughout the world and works closely with organizations and government agencies concerned with education, recreation, research and public service. In 1949 its endowment was approximately $2,107,000. Activities were carried on by members of a headquarters staff of 80, assisted by 700 volunteer boards and committees. Headquarters are located at 50 E. Huron St., Chicago 11, Ill., with John Mackenzie Cory as executive secretary.

Representatives from 43 states, Canada and 7 foreign countries, totalling 1,440, attended the largest midwinter conference ever held, when it convened Jan. 20–23, 1949, in Chicago. In place of the usual annual conference, seven regional meetings were held. Officers, elected by ballot, who assumed their duties following the final conference were: president, Milton E. Lord, Boston Public library, Boston, Mass.; first vice-president and president elect, Clarence R. Graham, Louisville Free Public library, Louisville, Ky.; second vice-president, John B. Kaiser, Newark Free Public library, Newark, N.J.; and treasurer, R. Russell Munn, Akron Public library, Akron, O.

The annual A.L.A. citations for distinguished service as library trustees were awarded to Julia Brown Asplund, Santa Fe, N.M., and Robert B. Tunstall, Norfolk, Va. The 28th Newbery medal was received by Marguerite Henry for *King of the Wind*, judged to be the outstanding contribution to children's literature during 1948; while the 13th annual Caldecott medal for the most distinguished picture book was conferred upon Berta and Elmer Hader for *The Big Snow*.

Harry Miller Lydenberg, Greensboro, N.C., received the Joseph W. Lippincott award ($500) from the donor for distinguished library service.

Carleton B. Joeckel, professor of librarianship, University of California, was the recipient of the first Herbert Putnam Honor award ($350), "a grant-in-aid to an American librarian of outstanding ability, for travel, writing, or other use that might improve his service to the library profession or to society."

Ina L. Hawes and Rose Eisenberg, of the bibliography division of the U.S. department of agriculture library, Washington, D.C., jointly won the Oberly Memorial award, given every other year to the compiler of the best bibliography on agriculture or the natural sciences. Ten libraries were presented with the 1949 John Cotton Dana Publicity awards, sponsored by the *Wilson Library Bulletin* and the A.L.A. Public Relations committee for outstanding publicity.

The Ada McCormick *Letter* Magazine award ($100) to a library for "progressive library service" went to the Trinidad Public library, Port of Spain, Trinidad, Carlton N. Comma, librarian, and the 1949 *Letter* Library award was received by the Louisville Free Public library, Clarence R. Graham, librarian. The 1949 *Letter* Librarian award "for the humanizing of knowledge" was conferred on Galileo Patino, director of the Biblioteca Nacional of the Republic of Panamá.

During the year, in addition to its regular periodicals, *A.L.A. Bulletin, Booklist, Subscription Books Bulletin, College and Research Libraries* and *Hospital Book Guide*, the association issued 11 new books from a total of more than 125 projects being considered.

Sixty-three far-reaching recommendations involving the reorganization of the A.L.A. were considered and presented for action at the 1949 and 1950 midwinter conferences. Questions under consideration were whether there should be a decentralized A.L.A. or a strong central organization, where the headquarters should be located, and whether a system of federated associations and departments should replace the existing divisions.

Among the surveys and studies completed was the one on library salaries and personnel, conducted by the U.S. bureau of labour statistics and A.L.A. Board on Personnel Administration, scheduled for 1950 publication. Through a $3,500 Rockefeller foundation grant to the A.L.A. a bibliographical guide to U.S. library resources was made possible.

A Carnegie corporation renewal grant to the A.L.A. of $32,000 continued the Film Service Through Libraries project until June 1951, enabling special work to be done in this field. By Sept. 1949 there were 65 public libraries conducting film lending services.

The association continued its work on censorship, intellectual freedom, library legislation and extension, increased library support and staff salaries, library training and recruitment, and international library projects and activities. (M. O. P.)

American Literature.

The year 1949 in American literature retreated from 1948's high-water mark of war books. The year's most important books focused rather on religious, political and social problems. In fiction especially, there was a lapse almost into silence about the war. After World War I there had been a similar lapse until the mid '20s, when the first-rate novels about it appeared, as if the material had to lie fallow for a while. It appeared that 1949 was a similar period of reaction.

The phenomenon of the year in nonfiction books was the overwhelming popularity of books on religious subjects. While preceding years had seen such writers as Lloyd Douglas and Thomas Merton topping the best-seller lists, 1949 witnessed a particularly striking demonstration of the popularity of nonfiction religious books. On the best-seller lists were Thomas Merton's *The Waters of Siloe,* a history of the Trappist order, Fulton J. Sheen's *Peace of Soul,* which offered the Catholic faith as the solution to the frustrations of the world, Fulton Oursler's *Greatest Story Ever Told,* a retelling of the gospel, and Norman Vincent Peale's *A Guide to Confident Living.* In a scholarly manner, Harry Emerson Fosdick retold the life of Jesus in *The Man from Nazareth.* Reinhold Niebuhr's study of the place of religion in civilization, *Faith and History,* was an important book. On the other side of the coin were two carefully documented studies of the growing power of the Catholic church in temporal affairs. Paul Blanshard's widely-read and controversial *American Freedom and Catholic Power* showed the influence of the Church on various phases of the American scene and Avro Manhattan's milder *The Vatican in World Politics* carried the investigation into broader fields.

Perhaps the most important discussion of the problems created by the war and the atom bomb was Vannevar Bush's *Modern Arms and Free Men,* which asserted that the atom bomb did not make other weapons obsolete and which proposed a politically conservative *laissez-faire* solution. Theodor Rosebury, in *Peace or Pestilence,* analyzed the frightening facts of biological warfare and favoured a liberal political policy as the way to avoid the possible catastrophe.

Samuel Eliot Morison added two more volumes to *The History of United States Naval Operations in World War II,* "Coral Sea, Midway and Submarine Actions" and "The Struggle for Guadalcanal." Oliver La Farge wrote a history of the air transport command in World War II, *The Eagle in the Egg.* Fletcher Pratt made a study of outstanding generals from Nathanael Greene through Omar Bradley, *Eleven Generals.* General H. H. Arnold's *Global Mission* combined his own life story with a history of the army air force, while Claire Lee Chennault's *Way of a Fighter* sounded a biting attack on U.S. policy in China and called for all-out aid to the Chinese nationalists.

Many books dealt with world affairs and the U.S. role in them. Howard K. Smith's *State of Europe* was a description and interpretation of developments in European countries since World War II. Owen Lattimore, in his *Situation in Asia,* reported on China, India and Indo-China. He proposed self-determination along with increased authority to the United Nations as a solution to the crisis in Asia. Anna Louise Strong's *Chinese Conquer China* described her view of China's ways of solving its own problems. Walter Duranty's *Stalin & Co.; the Politburo* analyzed the structure of the soviet government, and John Gunther reported on eastern Europe in *Behind the Curtain.* Stringfellow Barr wrote *The Pilgrimage of Western Man,* a history of modern Europe.

The American Scene.—The problem of race relations in the United States prompted a number of good books. E. Franklin Frazier's *The Negro in the United States* was an authoritative factual survey of the Negro from slavery to the F.E.P.C. Lillian Smith's *Killers of the Dream,* which treated the same material more emotionally, tried to shock the reader into realization of the Negro's desperate situation. Ray Sprigle's *In the*

SCENE from *Death of a Salesman,* by Arthur Miller, the first play to win all three top U.S. drama awards (the Pulitzer, New York Drama Critics Circle and Antoinette Perry awards) and the first current drama to become a Book-of-the-Month club selection. The play opened in New York city in Feb. 1949, staged by Elia Kazan

Land of Jim Crow set forth his experiences in the south, where he passed as a Negro. Carey McWilliams, in *North from Mexico,* studied the mistreatment of Mexican minorities in California.

Margaret Mead, in *Male and Female,* recorded the battle of the sexes in a changing world, and concluded that a healthy society would be possible only when the potentialities of both sexes were realized. Clyde Kluckhohn's *Mirror for Man* discussed the relation of anthropology to modern life. H. A. Overstreet's *The Mature Mind,* an analysis of how mass media of communication perpetuate immaturities and infantilisms, was widely read. Catherine Mackenzie presented a synthesis of the work of experts in the field of child psychology in *Parent and Child.* Lincoln Barnett's *The Universe and Dr. Einstein* explained the scientist to the layman.

Other books which studied phases of the U.S. scene or U.S. culture were Oliver Larkin's *Art and Life in America,* an analysis of the interrelation of American art and thought, and Roger Burlingame's *Backgrounds of Power,* a history of mass production and its social effects. Isabel Leighton edited *The Aspirin Age, 1919–1941,* a volume of essays by Samuel Hopkins Adams and others on U.S. life between World Wars I and II, and Lewis Gannett wrote *Cream Hill,* a group of leisurely essays on his experiences as a week-end countryman. Carl Carmer's *Dark Trees to the Wind* was a romantic history of New York state traditions and folklore. Marion L. Starkey, in *The Devil in Massachusetts,* conducted a modern inquiry into the Salem witch trials, and O. John Rogge wrote about *Our Vanishing Civil Liberties.* Arthur Schlesinger, Jr., in *The Vital Center,* attempted to formulate a theory of liberalism and advocated a national policy along the lines of the Fair Deal. Leland Stowe, drawing on his observations as a foreign correspondent, recommended popular participation in government in *Target: You.*

Memoirs and Historical Works.—The most widely read memoirs of the year were Eleanor Roosevelt's *This I Remember,* a factual account by the president's wife. Grace Tully published *F.D.R.—My Boss,* the story of the president as his secretary saw him. Edward Stettinius' *Roosevelt and the Russians* revealed the inner workings of the Yalta conference and the attempts of the United States to co-operate with Russia. David Lilienthal's *This I Do Believe* expressed his affirmative political and social credo, and Morris R. Cohen's *A Dreamer's Journey* told the life story and intellectual history of an American philosopher. *The Autobiography* of Will Rogers was put together from selections of his own writings.

Historical works included Ray Allen Billington's *Westward Expansion,* a definitive study, in the tradition of Frederick Jackson Turner, of the frontier in United States history. The two chief Lincoln books were Kenneth P. Williams' *Lincoln Finds a General,* a military history of the Civil War, and Carl Sandburg's *Lincoln Collector,* papers from the Barret collection with extended comment. Samuel F. Bemis wrote *John Quincy Adams and the Foundations of American Foreign Policy,* a history of Adams' early years, and Frederick Lewis Allen, in *The Great Pierpont Morgan,* presented the financier as a symbol of his era.

Fiction.—The shift away from the war as a focus of interest was even more clear in fiction than in nonfiction. There were some war novels, and of course many books whose themes were not directly concerned with the war still dealt with people in a society suffering from the effects of war. At the same time many good novels appeared which, although chiefly concerned with character, exploited unusual settings or occupations or explained the ins-and-outs of special situations. One of the most popular of these was John Brooks's *The Big Wheel,* a story which showed how a big-time slick news-weekly gets written, and dramatized the conflicting loyalties in the minds of its editors. Tom Lea's *The Brave Bulls* told the adventures of a Mexican matador. George Weller's *The Crack in the Column* gave a detailed and accurate explanation of the intricate forces and personalities involved in the Greek resistance movement and civil war, but the narrative suffered at times from the weight of exposition. One of the year's major novels depended much on the nature of its setting—Nelson Algren's *The Man With the Golden Arm,* which dug deep into the materials and people of the Polish slums of Chicago.

Without Magnolias, by Bucklin Moon, projected realistically the Negro's position in the south. *The Sure Thing,* by Merle Miller, set forth the catastrophic effects of witch hunts on government employees. Albert Maltz, in *The Journey of Simon McKeever,* created a dignified and almost tragic character and also focused attention on the problems of the old age pensioner. William Gardner Smith's perceptive story of a Negro in the U.S. army of occupation in Germany, *Last of the Conquerors,* was a picture of how democracy sometimes fails to work. Virginia Sorensen's *The Evening and the Morning* put a difficult mother-daughter relationship in the setting of the Mormon country. Norman Katkov, in *A Little Sleep, A Little Slumber,* told the story of a Russian Jewish immigrant's death and its effect on his children. Haakon Chevalier's *For Us The Living* used a background of west coast fruit packer and labour disputes for his story of murder. Kay Boyle's novel of oblique characterization, *His Human Majesty,* used a ski troop training centre. Ludwig Bemelmans, writing in his usual humorous nostalgic manner, described the history of a Tirolese village before, during and after the nazis, in *The Eye of God.* Harold Robbins wrote about the early days of the moviemakers in *The Dream Merchants.* The theme of Mildred Walker's *Medical Meeting* was marriage, but the medical profession was an important element in the book's interest. There were two books with good neighbour settings—David Davidson's *The Hour of Truth* and Robert Carver North's *Revolt in San Marcos.* Two novels employed Kentucky settings, Harriette Arnow's *Hunter's Horn* and Gwen Davenport's humorous *Family Fortunes.*

Along with these novels which threw emphasis on setting was a small but highly rated group of novels concerned primarily with character. Among these was one of the most distinguished first novels of the year, Paul Bowles's *The Sheltering Sky.* Although the North African setting was a vivid part of the book, it was his mature and sensitive portrayal of somewhat existentialist characters involved in a triangle situation which marked the book as superior. Another novel which probed delicate human relations was Isabel Bolton's *The Christmas Tree,* a story which explored the sources of homosexuality. Walter Van Tilburg Clark's *The Track of the Cat,* a novel full of suspense and portentous symbols, showed the haunting and destructive effect of two panthers, one real and one imaginary, on a ranch family.

Other novels in this group were Elizabeth Janeway's *The Question of Gregory,* a portrayal of an American marriage during World War II. Ben Lucien Burman created a memorable character in Captain Asa in *Everywhere I Roam.* There were also Josephine Lawrence's slight novel, *My Heart Shall Not Fear,* a study of selfish and unselfish love; Hamilton Basso's *The Greenroom,* in which a young editor sojourning on the Riviera becomes disillusioned about an elderly Edith Wharton sort of character; and Clyde Brion Davis' *Playtime Is Over,* about a small Arkansas farmer.

The year saw books published by several standard U.S. writers. Sinclair Lewis' *The God-Seeker,* an American frontier novel, was dubiously received and was criticized as the work of a bored, reformed satirist, far from the mood of *Babbitt* and *Main Street.* William Faulkner published *Knight's Gambit,* a group of short semidetective stories and a novella set in the familiar Faulkner south and involving characters from his *Intruder in the Dust*. James Branch Cabell, who published his first book in 1904 and was a major figure of the '20s, rounded out the half-century with *The Devil's Own Dear Son,* an ironic tale of a man who set out to find his real father, the Devil. John Dos Passos completed his New Deal trilogy with *The Grand Design*. Upton Sinclair brought Lanny Budd to friendly terms with President Truman and the world in general in *O Shepherd, Speak!,* at last catching up with history in the tenth and professedly final volume of the interminable series. John P. Marquand's facile novel of upper middle class America, *Point of No Return,* was a best-seller. Christopher Morley's *The Man Who Made Friends with Himself* was the life and meditations of a literary agent.

Other works of fiction by old-timers were Pearl Buck's *Kinfolk,* a novel of modern China; Taylor Caldwell's uninspired melodrama, *Let Love Come Last;* Jerome Weidman's satire on the business world, *The Price Is Right;* and Mary Ellen Chase's novelette, *The Plum Tree,* a neatly written story of insane old ladies in a nursing home.

One of the most popular novels of the year purported to be a historical novel. John O'Hara intended *A Rage to Live* to be a period picture of life in a small Pennsylvania city during the early years of the 20th century, as well as a portrait of a bad lady. An excellent historical novel of the year was A. B. Guthrie's exciting *The Way West,* which used the Oregon trail. Others in the orthodox vein included Thomas Costain's *High Towers,* about a French family in 18th-century Canada; Frances Ormond Gaither's *Double Muscadine,* a story of slavery days in Mississippi; Anne Goodwin Winslow's *It Was Like This,* a girl versus two suitors in a 19th-century deep-south setting; and Marguerite Steen's *Twilight on the Floods*.

There were several collections of distinguished short stories. The stories in Eudora Welty's *The Golden Apples* gave a connected picture of life in the Mississippi country. Truman Capote, in *A Tree of Night, and Other Stories* dissected a group of disturbed personalities. Shirley Jackson skillfully combined the macabre and the familiar, especially in the title story of *The Lottery: or, The Adventures of James Harris*. Dorothy Canfield published 17 short stories, mostly set in Vermont, in *Four-Square*.

Two standard authors returned with books of essays. H. L. Mencken published *A Mencken Chrestomathy,* a selection of his essays and epigrams; and Joseph Wood Krutch presented *The Twelve Seasons,* essays on man and nature. Willa Cather's *On Writing* gathered her critical essays on her own writing as well as that of others. Kenneth Roberts' *I Wanted to Write* passed on to young writers the results of his experiences in learning to write. Robert Benchley's *Chips off the Old Benchley* brought together previously unpublished sketches and humorous pieces.

Belles Lettres.—Quantitatively, the phenomenon of the year was the swelling wave of books by and about Herman Melville, which began in 1948 and by the end of 1949 threatened to overtop the flood of Henry James. The most conspicuous token of the continued interest in James was Leon Edel's edition of *The Complete Plays*. The enormous quantity of Melville research which occupied scholars during the '40s was bursting into print. Two major critical works were Howard P. Vincent's *The Trying-Out of Moby-Dick,* a fascinating quest for the book's sources and an illuminating interpretation of its meaning; and Richard Chase's more subjective *Herman Melville: A Critical Study,* which undertook a complex interpretation and analysis of all his works. A specialized study was made by Nathalia Wright in *Melville's Use of the Bible*. The reissue of Melville's own writings continued. Henry A. Murray edited *Pierre,* the third volume in the scholarly new *Complete Works,* supplying an accurate fully annotated text and a brilliant analysis of its literary and psychological significance. Jay Leyda's edition of *The Complete Stories of Herman Melville* made available the neglected magazine pieces. *The Confidence-Man* was reprinted for the first time in the United States. All signs were pointing to a rise rather than a recession of the flood during 1950; dissertations were still being added to the score already completed, more than a dozen books were in preparation, and further volumes of the *Complete Works* were scheduled.

There were a number of biographies of important U.S. writers, the most impressive of which was Ralph L. Rusk's definitive *Life of Ralph Waldo Emerson,* an exhaustively factual rather than critical or intellectual study. Most favourably received by historians and literary scholars was Ernest Samuels' *The Young Henry Adams,* published at the close of 1948. In this first volume of a projected two-volume biography, Adams is shown as a very human and ardent idealist, and is rescued from the injustice he did himself by an old man's ironic hindsights and distortions in the famous *Education of Henry Adams*. John A. Pollard wrote an excellent *John Greenleaf Whittier, Friend of Man*. Three volumes were added to the fine American Men of Letters series: Mark Van Doren's *Nathaniel Hawthorne,* James Grossman's *James Fenimore Cooper,* and Perry Miller's *Jonathan Edwards*. Robert H. Elias wrote a good study of *Theodore Dreiser,* and Dixon Wecter edited the *Love Letters of Mark Twain*.

Donald Stauffer contributed to Shakespeare scholarship with his *Shakespeare's World of Images* and Francis Fergusson wrote an important analytic study of drama as the imitation of action, *The Idea of a Theatre*. There also appeared the first translation since 1908 of Miguel de Cervantes' *Don Quixote,* in idiomatic modern English, by Samuel Putnam.

Poetry.—Few of the major poets published during 1949. Conrad Aiken's *Skylight One* combined sensuousness and irony. *The Selected Poems* of William Carlos Williams and *The Complete Poems* of Robert Frost appeared. The most important anthology was *The Poetry of the Negro—1746–1949,* edited by Arna Bontemps and Langston Hughes.

Theodore Roethke's *The Lost Son, and Other Poems,* centring about greenhouse imagery, was well received by the critics. Ellis Foote wrote *Layman's Fall; A Fantasy in the Joyous Mode,* a long symbolic poem. Richard Eberhart's *Burr Oaks,* May Sarton's *The Lion and the Rose,* and Rolfe Humphries' *The Wind of Time* were other new volumes.

A major critical controversy was precipitated by the award of the Bollingen prize to Ezra Pound for his *Pisan Cantos*. This selection, the first made under a grant by the Bollingen foundation to the Library of Congress to encourage U.S. poets, was made by the Committee of the Fellows in American Letters of the Library. Since Pound was, at the time of the award, under indictment for treason, the committee accompanied its announcement by a special statement that they were aware of the situation but that they had made the choice on poetic considerations alone. The inevitable public debate over the award was brought to battle pitch by the publication in the *Saturday Review of Literature* of two articles by Robert Hillyer, who accused the committee of a fascistic conspiracy against American life and letters. Soon the battle had reached such a pitch that a congressional investigation was proposed, perhaps the closest touch congress had had with literature since the citation of ten Hollywood writers for contempt. (*See* also CHILDREN'S BOOKS; ENGLISH LITERATURE; LITERARY PRIZES.)

FILMS OF 1949.—*James Fenimore Cooper; Henry Wadsworth Longfellow; Washington Irving* (Encyclopædia Britannica Films Inc.); *Legend of Sleepy Hollow* (Byron, Inc.). (H. M. H.)

American Mathematical Society: *see* SOCIETIES AND ASSOCIATIONS.

American Medical Association.

The American Medical association in 1949 included 145,036 physicians. These were grouped in 2,011 component county medical societies. The Association had investments of approximately $6,000,000 and a gross income annually in excess of $3,000,000.

The principal officers of the association in 1949 were: president, Ernest E. Irons, Chicago; president-elect, Elmer L. Henderson, Louisville, Ky.; vice-president, James F. Norton, Jersey City, N.J.; secretary and general manager, George F. Lull, Chicago; treasurer, J. J. Moore, Chicago; editor of publications, Morris Fishbein, Chicago; business manager, Thomas R. Gardiner, Chicago. The board of trustees included: Louis H. Bauer, chairman, Hempstead, N.Y.; John H. Fitzgibbon, Portland, Ore.; James R. Miller, Hartford, Conn.; Walter B. Martin, Norfolk, Va.; Dwight H. Murray, Napa, Calif.; E. J. McCormick, Toledo, O.; Edwin S. Hamilton, Kankakee, Ill.; Gunnar Gundersen, La Crosse, Wis., and F. J. L. Blasingame, Wharton, Tex.

The publications of the American Medical Association in 1949 included the *Journal of the American Medical Association* with a circulation of more than 130,000 weekly; *Hygeia,* a health magazine for the public, with a circulation of approximately 250,000 monthly; nine medical journals for various medical specialties; a complete directory of the medical profession, medical schools, libraries and hospitals; and the *Quarterly Cumulative Index Medicus*, indexing regularly the contents of more than 1,500 medical periodicals.

The association functions through its councils and bureaus. These include the Council on Medical Education and Hospitals, which establishes minimum standards for education in medical schools and hospitals, for occupational therapists, physical therapists, record librarians and similar medical technologists; the Council on Pharmacy and Chemistry, which investigates new remedies and controls their advertising claims; the Council on Industrial Health, which standardizes the care of workers in industry; the Council on Medical Service, which investigates plans for medical care and encourages the growth of voluntary sickness insurance plans; the Council on Foods and Nutrition, which investigates foods and nutritional problems; and the Council on Physical Medicine, which studies physical devices used in the treatment of disease.

The bureaus, which have their headquarters in the office of the association, include those devoted to medical economics, exhibits, investigations of frauds and quackery, medical legislation and health education.

The printing establishment of the association and the headquarters office personnel at 535 N. Dearborn St., Chicago 10, employed more than 800 people in 1949.

The American Medical Association continued to oppose plans for nationalization of medicine, emphasizing its opposition to compulsory sickness insurance. The association favoured proposals for the extensions and construction of hospitals and health centres through the United States, the extension of public health units, the care of maternal and child health, the care of the crippled, the blind and those otherwise disabled, as covered through the Social Security act, and the establishment of a national science foundation to encourage co-ordinated and intensified research. Moreover, the association provided both funds and facilities for extending as widely as possible prepayment plans to provide for covering hospital costs and medical care to the indigent. The association also favoured insurance against loss of wages caused by illness and against the costs of medical care.

The house of delegates of the American Medical association in Dec. 1949 for the first time established annual dues of $25 for each member. Most of these funds were to be used for a nation-wide campaign of education including opposition to nationalized medicine.

As the year ended, Morris Fishbein retired as editor of the publications and was succeeded by Austin Smith as editor of the *Journal,* Richard J. Plunkett as editor of the special journals, W. W. Bauer as editor of *Hygeia,* which was renamed *Today's Health,* and Magdalene Freyder as editor of the *Quarterly Cumulative Index Medicus.* (M. FI.)

American Society of Civil Engineers: *see* SOCIETIES AND ASSOCIATIONS.

American Society of Composers, Authors and Publishers: *see* SOCIETIES AND ASSOCIATIONS.

American Society of Mechanical Engineers: *see* SOCIETIES AND ASSOCIATIONS.

American Veterans' Committee: *see* VETERANS' ORGANIZATIONS.

American Veterans of World War II (Amvets): *see* VETERANS' ORGANIZATIONS.

Anaemia.

In 1949 vitamin B_{12} came into general use in the treatment of pernicious anaemia and certain other macrocytic anaemias. Its value in the production of remissions was confirmed repeatedly, and its efficiency in checking the progress of neurologic and tongue symptoms was established. The mechanism of its action was still a problem, but some investigators felt that it was the same as the "extrinsic" factor of W. B. Castle and was identical with the antipernicious anaemia principle of liver. It was postulated that the "intrinsic" factor does not react with the extrinsic factor, as was previously thought, but it facilitates the absorption of the extrinsic factor. Vitamin B_{12} was not readily absorbed when given by mouth unless given in large amounts, or accompanied by intrinsic factor (normal gastric juice).

Folic acid continued to prove effective in the treatment of macrocytic anaemias, but the effect was less pronounced than with liver derivatives. In the hands of different investigators the reaction to the neurologic changes varied. While some noted improvement or no aggravation of symptoms, others found development or progression of the cord changes, which were reversible, however, with large amounts of liver extract. Good results followed its uses in the macrocytic anaemia of pregnancy, even when liver proved inadequate.

Subacute combined degeneration of the spinal cord in pernicious anaemia was found to be reversible if intensive liver or vitamin B_{12} therapy was instituted before axis cylinders had been destroyed. In some patients, glossitis responded to treatment with members of the vitamin B complex, not effective in improving the blood.

Relapses in ability to produce new blood cells in pernicious anaemia followed the discontinuance of liver in from 8 to 18 months, although some did not show anaemia over a period of 26 to 29 months. Vitamin B_{12} was found to be effective in the megaloblastic anaemia of infancy.

Increased attention was given to the iron deficiency anaemias and the mechanism of absorption of iron. Radioactive iron was absorbed by the cells of the circulating blood in proportion to the number of reticulocytes. During infection or in the presence of an abscess (turpentine) there was a fall in plasma iron and a delay in the uptake of radioiron by the red blood cells, although the deficiency was less marked in anaemic dogs on a diet low in iron. In recovery from anaemia of infection, there was a sharp increase in the iron binding capacity of the serum, although the low serum iron concentration associated with anaemia in acute and chronic infections was not the result of the low iron binding capacity of the serum. In iron deficiency anaemia there was a low percentage saturation of the iron-binding material of the serum. In dogs with anaemia of haemorrhage, haemoglobin regeneration was most definite after liver or beef muscle feeding, whereas total blood proteins regenerated well after liver, meat, casein and egg proteins. In anaemic rats haemoglobin regeneration followed the use of dietary proteins in the following order: first eggs, then meat, processed soya, casein, peanut, maize, wheat and gelatin. Of these, casein, soya and maize protein were more effective in haemoglobin regeneration. In diets with caloric deficiency, haemoglobin regeneration was favoured at the expense of weight recovery. Molybdenum-iron complex was found to be more effective in some patients with anaemia during pregnancy, than other forms of iron. An iron-sucrose preparation was developed which was effective when given intravenously with but minimum reactions.

Vegetarian Indian soldiers in Iraq had significantly lower blood levels than meat-eating individuals, several showing nutritional macrocytic anaemia, even though they were on a 3,000-calorie diet with 80 g. of vegetable protein. One hundred and twenty seven cases of severe refractory, tropical macrocytic anaemia were found in Sepoys serving in Assam and eastern Bengal. The most effective therapeutic measures were adequate diet, control of infections and transfusions, but 38% died.

In congenital haemolytic anaemia an extreme maturation arrest, especially of the red blood cell forming tissue, in the marrow developed during the major crises. In contrast to patients with congenital haemolytic anaemia, those with the acquired form showed evidence of sensitization of their erythrocytes by an antibodylike agent in the plasma, although it was adsorbed on the erythrocytes at times. In nocturnal haemoglobinuria, the cause of haemolysis was attributed to an abnormality of the erythrocytes. Rapid improvement was noted in a patient with acute haemolytic anaemia of favism after therapy with ferrous sulphate. Diasone (disodium formaldehyde sulphoxylate diaminodiphenylsulphone), used in the treatment of leprosy, produced a mild haemolytic anaemia in some patients, responding to iron, liver and vitamin B complex.

Haemolytic anaemia developed in newborn dogs from absorption of isoantibody present during the first day in the breast milk of immunized mothers.

Acute haemolytic anaemia appeared in approximately 2% of all births in otherwise healthy Rh-positive infants when there had been placental immunization of the mother with the Rh antigen.

Breaks in the foetal and maternal blood vessels in the placenta accounted for the contact of foetal and maternal blood in erythroblastosis foetalis, allowing the agglutinative and haemolytic maternal antibodies to destroy the foetal cells and produce a haemolytic anaemia. Exchange transfusions in newborn babies with haemolytic anaemia reduced the mortality from 63.5% to 18.1%. After the use of Rh hapten, 20 of 27 babies with severe erythroblastosis recovered and remained well, 5 dying of other causes. A number of reports added to the data on Rh occurrence, types, variants and inheritance.

Acute macrocytic anaemia developed in rats several weeks or months after the surgical formation of a blind loop in the small intestine. Nutritional macrocytic anaemia was produced in swine by feeding a purified diet containing a folic acid antagonist. In 45 patients with tropical macrocytic anaemia, improvement was noted in 39 after the use of refined liver extract.

Severe hypoplastic anaemia was noted in 7 patients who had prolonged administration of atabrine. Recovery was spontaneous and gradual, apparently not influenced by therapeutic measures. (*See* also VITAMINS.)

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Anaesthesiology. The introduction of decamethonium bromide (C-10) under the trade name of Syncurine gave workers in anaesthesiology and in the field of shock therapy an agent with a curarelike effect but one which could be more easily obtained and prepared for use. A safe and effective antidote, however, was not known. The action of this agent appeared to be more fleeting than that of curare, the duration of a fully effective dose being from a third to a fourth as many minutes as for curare. Decamethonium bromide produced less effect on the pharyngeal and respiratory muscles than curare and was less active than the latter in causing release of any histaminelike substance. The optimal dose was 2 to 3 mg., injected at the rate of 1 mg. per minute. It appeared to act quickly, that is, in the matter of a minute or two as compared to the five to ten minutes required for the action of curare. Satisfactory and safe relaxation were obtained with the use of this new drug, and it was a welcome addition to the list of relaxants previously available.

The number of so-called pain clinics increased in 1949, and the quality of results obtained was improved. The use of dolamin (benzyl alcohol 0.75%, ammonium sulphate 0.75%, sodium chloride 0.48% in an ampule with sufficient water to make 10 c.c.) prevailed; the effect could never be predicted. In cases in which little of the material was to be used on but one or two nerves, variations in the solution were tried such as omitting the benzyl alcohol and increasing the ammonium sulphate up to 1.5% or in some cases up to 2.5% of the solution. Checking of accurate placement of needles by roentgenograms continued, and greater accuracy in technique was developed. It was made clear that paravertebral somatic injection of alcohol near the nerve roots could not be repeated for some weeks after the first injection without danger of a bizarre pattern of paralysis.

The injection of local anaesthetics suspended in peanut oil into the caudal canal or other vascular areas was found to be complicated by the inadvertent administration of the oil into the veins. It was recommended that a 6% solution of phenol be employed for destruction of nervous pain paths.

R. E. Courtin described seven electroencephalographic levels of anaesthesia and suggested their use as practical measures of the depth of anaesthesia. Subsequently R. G. Bickford invented a device which automatically controlled the depth of anaesthesia both in human beings and animals. The apparatus which injected the anaesthetic agent worked on the principle of activation by the electrical potentials emanating from the brain of the subject. (*See* also SURGERY.)

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Anderson, Eugenie (1909–), U.S. ambassador to Denmark, was born May 26 at Adair, Ia. She attended Stephens college, Columbia, Mo., and Carleton college, Northfield, Minn., and the Institute of Musical Arts in New York city. She and her husband, John P. Anderson, operated a 500-ac. farm near Red Wing, Minn. In 1944 she entered Minnesota politics, and became active in Democratic-Farmer-Labor party work. In 1948 she became Democratic national committeewoman, and delegate-at-large from Minnesota to the Democratic national convention. During the 1948 elections, she campaigned strongly to carry Minnesota for Pres. Harry S. Truman, and on Oct. 12, 1949, the president announced her appointment as ambassador to Denmark. She was the first woman in U.S. history to be offered the rank of ambassador. The U.S. senate confirmed the appointment, and she was sworn in as ambassador Oct. 28, 1949.

Andorra.

Andorra is a small autonomous state between France and Spain. Area: 174 sq.mi. Pop. (1948 est.): 5,000. Language: Catalan. Religion: Roman Catholic. Capital: Andorra-la-Vieja (pop. *c.* 1,000). Coprinces: the president of the French republic and the bishop of Urgel, Spain, respectively represented in 1949 by André Bertrand and Jaime Sansa Nequi, their *viguiers* or representatives.

History.—The event of the year 1949 was an order given on March 8 by a Paris court to the Radiodiffusion Française to cease jamming the broadcasts of Radio Andorra. This order was confirmed by the Paris court of appeal on May 24. The jamming had started in April 1948 when the proprietors of Radio Andorra refused to sell their station to a French concern.

The general council suggested during the year the building of an airfield and the linking of Andorra to the international telephone trunk system; but since 1945 the strained relations between France and Spain had rendered any common decision by the two *viguiers* practically impossible.

Angling.

Fishing licence sales in the U.S. increased to a new high total of 14,582,739 in the year ending June 30, 1948. The gross revenue derived by the 48 states from licence sales was $28,350,069. California headed the list with 1,374,029 licences sold; Michigan was second with 1,108,510. Nonresident licence sales totalled 1,605,661. Michigan attracted the greatest number of nonresident sport fishermen with 281,825, with Wisconsin second and Minnesota third.

In the 1949 national casting tournament one new world record was established in the ⅝-ounce distance bait event by Wilbur Brooks, who made a long cast of 427 ft. The 1949 tournament was the largest on record with 250 registrations. Four new events were added in fly and bait casting which required the use of regular fishing tackle instead of tournament tackle. Glass salmon rods made their first appearance in tournament competition.

The 6th international tuna cup match was held at Wedgeport, Nova Scotia. Five teams using 20 boats competed on Sept. 14, 15 and 16, during which time 72 bluefin tuna were caught. The U.S. team, captained by Hugo Rutherford, successfully defended the championship and retained the solid silver Alton B. Sharp trophy. The U.S. team landed 19 tuna, winning 8,391 points; Brazil was second (6,220), Cuba third (5,296), the British commonwealth fourth (4,697) and Argentina fifth (4,257).

Four world-record fish were caught by rod and reel during 1949. A 15-lb. 3-oz. spotted weakfish (length 34½ in., girth 20½ in.) was captured at Fort Pierce, Fla., by C. W. Hubbard on Jan. 13. A 55-lb. channel catfish (length 50 in., girth 27 in.) was caught by Roy A. Groves in the James river, S.D., on May 18. On May 22 this same angler set another world record with a 94½-lb. blue catfish (length 56 in., girth 35 in.). On July 24 a 67½-lb. muskellunge was caught by Cal Johnson in Lac Court Oreilles, near Hayward, Wis. (length 60¼ in., girth 33½ in.).

CANADIAN CONSERVATIONISTS stripping a muskellunge of spawn for incubation at the Deer Lake hatchery near Peterborough, Ont. Plans were under way in 1949 for greatly increasing the numbers of this species of pike, the largest North American fresh-water game fish

FILMS OF 1949.— *Spinning for Steelheads* (Hawley-Lord).

(A. J. ME.)

Anglo-Egyptian Sudan.

A territory in northeast Africa, the Anglo-Egyptian Sudan is under the joint sovereignty of Great Britain and Egypt. Area: 967,500 sq.mi.; pop. (1948 est.): 7,919,000. Languages: English, Arabic and various Nilotic and Negro tribal dialects in the south. Religion: Arabic minority is Moslem; the bulk of the Negro population is heathen; *c.* 20% of the population in the south is Christian. Chief towns (1948 est.): Khartoum (cap., 61,800); Omdurman (117,600); Wad Medani (56,600); El Obeid (65,800); Port Sudan (47,000). Governor general: Sir Robert George Howe.

History.—The comprehensive scheme of constitutional reforms, which had been announced in June 1948, was given substance by the election of a legislative assembly on Nov. 15, 1948, and, eight days before the end of 1948, this was formally opened by Sir Robert Howe. The assembly met under the leadership of Mohammed Saleh Shengeiti, formerly a judge of the Sudan high court, who was appointed speaker.

In spite of the boycotting of the elections by an important group of small parties, the house was probably a fairly representative one. Superficially, the main political issue concerned the question of the relations between a self-governing Sudan and the kingdom of Egypt. Those parties who had boycotted the election and who adopted the general title of Internal Struggle front, or Unionists, demanded a closer relationship with that country, varying from complete union to a sort of dominion status, with the corresponding right of secession. The other main group was the Independence front, composed of parties whose declared objective was complete independence from both Egypt and the United Kingdom. The third group, the Black block, claimed to represent the relatively few literate Sudanese who originated from the southern Sudan. (*See* also Egypt.)

The influence of the Independence front was strong in the assembly, which elected as its president Miralai Abdallah Bey Khalil—the secretary general of the Umma (Nation), its largest party. In spite of the fact that the apparently dominating issue was that of future relations with Egypt, religious and other internal differences underlay a good deal of the strife of the various parties—in particular, the partisans of a closer relationship with Egypt were linked with a religious sect, under the leadership of Sir Ali el-Miraghani Pasha, who, however, rejected political leadership, while the Umma acknowledged the leadership, both religious and political, of Sir Abdel Rahman el-Mahdi Pasha, a son of the 19th-century Sudanese leader.

On Feb. 17, Sir James Robertson, the senior executive member, announced the government's policy. It was to encourage the achievement of full self-government before a decision should be made about relations with the condominium powers, or about the eventual constitution of the Sudanese state. There was to be an active policy of social welfare within the limits of sound finance, in particular a ten-year educational program, together with the creation of school dental services and the development of important new medical facilities.

Economic measures announced at this time included a search for new resources to offset the country's dependence upon cotton. In this connection an important development in the future life of the Sudan was foreshadowed by the signature on Feb. 10 of the Uganda hydroelectric scheme, whereby, among other plans, it was hoped to drain the great Sudd swamp area of the southern Sudan, allowing for its possible development as a ranching area and conserving great quantities of Nile water for irrigation, not only in Egypt, but in the northern Sudan, where it would make possible a large expansion of the Gezira plantations, which were due to be nationalized in June 1950.

(H. S. D.)

Education.—(1946) Northern System: government schools: elementary 197, pupils 29,762; subgrade and Koran 415, pupils 28,292; intermediate 16, pupils 2,210; technical 2, pupils 317; teachers' training colleges 2, pupils 204; secondary 5, pupils 686. Nongovernment schools 55, pupils 12,287. Gordon Memorial college, students 207. Southern System: government schools 2, pupils 179. Mission schools 484, pupils 15,413.

Finance and Banking.—Budget: (1948 est.) revenue £E11,293,531, expenditure £E10,014,640; (1949 est.) revenue £E15,578,766, expenditure £E11,573,745. External debt (Dec. 31, 1947) £E13,128,000. Monetary unit: Egyptian pound with an exchange rate of £E0.975 to the pound sterling, or $2.87 U.S. on Dec. 15, 1949.

Foreign Trade.—Imports: (1948) £E22,100,000. Exports; (1948) £E24,700,000. Main import in 1948 was cotton piece goods, accounting for 20.5% of total value of imports, and main exports were cotton and cottonseed, accounting for 75.6% of total exports. Main sources of imports were United Kingdom 24%, India 22% and Egypt 19%. Main destinations of exports were United Kingdom 37%, India 25% and Egypt 18%.

Transport and Communications.—Licensed motor vehicles (Dec. 1948): cars 2,645, commercial vehicles 3,374. Railways (1947) 2,013 mi. Telephones (1948): subscribers 3,520.

Agriculture.—Main crops (metric tons): cotton (1948) 54,000; gum arabic (1947–48) 37,000; peanuts (1948) 8,000. Livestock: cattle (Jan. 1948) 3,500,000; sheep (1947–48) 5,500,000; horses (1946–47) 20,000; asses (1947–48) 500,000; goats (1946–47) 4,200,000; camels (1946–47) 1,400,000.

Angola: *see* Portuguese Colonial Empire.

Animal Fats: *see* Vegetable Oils and Animal Fats.

Animal Industry, Bureau of: *see* Agricultural Research Administration; Veterinary Medicine.

Annam: *see* French Union.

Annecy Trade Conference: *see* Tariffs.

Anniversaries and Centennials: *see* Calendar, 1950, page xxxii.

Antabuse: *see* Intoxication, Alcoholic.

Antarctica. Between 1772–75, when the English explorer Sir James Cook circumnavigated Antarctica without actually sighting land, and 1949, about 170 expeditions from many nations had contributed to the comparatively limited knowledge of this last-discovered continent. Antarctica has approximately 14,000 mi. of coast line. Of the total land area of about 6,000,000 sq.mi., nine-tenths of which is a vast continental ice sheet, in some places thousands of feet thick, only 2,000,000 sq.mi. has ever been seen by man.

During 1949 there were no further developments in the dispute over sovereignty of the antarctic, where land was claimed by Argentina, Chile, Great Britain, Australia, France and Norway. Although not based on initial exploration, the claims of three nations overlapped in the Palmer Land sector. The Argentines and Chileans maintained two bases each, while Great Britain had six bases in operation there. No claim, however, was recognized by the United States, which also made none of its own, but reserved all rights to future antarctic claims.

At the annual meeting of the soviet All-Union Geographical society in Moscow on Feb. 11, 1949, it was declared that any decisions made by the claimant nations were invalid, and a resolution was adopted calling for soviet participation in all future international discussions on Antarctica.

On Jan. 18, 1949, the British foreign office announced that an agreement had been reached between Great Britain, Argentina and Chile whereby no warships would be sent south of latitude 60° S., in the antarctic summer season of 1948–49 except on customary routine movements. On Nov. 18, 1949, this agreement was renewed for the 1949-50 season.

In February and March 1949, a British supply ship was able to change personnel and replenish supplies at all British bases on Palmer Land except at the Stonington Island base in Marguerite bay. The ship was unable to penetrate the heavy pack ice and some of the men were involuntarily forced to spend their third winter on the Antarctic continent. It was hoped that the ice conditions in February–March 1950 would be such that the ship could get to this station with supplies and new personnel.

The French expedition ship "Commandant Charcot," with Andre Frank Liotard in command, also was unable to reach the French-claimed Adélie Land sector. This area was first seen by Jules Dumont d'Urville in 1840, when he claimed it for France. The "Commandant Charcot" was forced to return to France, but left again in late Sept. 1949 for her second attempt to reach shore in the early summer season of 1949–50.

The joint Norwegian-Swedish-British expedition departed from Norway in the early part of Nov. 1949 aboard the sealing vessel "Norsel." Its destination was the Norwegian-claimed Queen Maud Land sector where a party of scientists, under the leadership of Capt. John Giaver of Norway, would conduct scientific investigations and geographical exploration until March 1952. The general direction of the expedition was under the supervision of Harald U. Sverdrup of Oslo, previously director of the Scripps Institute of Oceanography, La Jolla, Calif.

(F. Re.)

Anthropology. The steady postwar growth of anthropology continued during 1949, especially in the large number of important publications that appeared during the year, the growth of anthropology departments in the universities and the expansion of field studies and various international activities. In the United States one indication of anthropological progress was the large increase in membership of the American Anthropological association.

The 29th session of the International Congress of Americanists, held at the American Museum of Natural History in New York, N.Y., from Sept. 5 to 12, was attended by 395 anthropologists from Europe and the western hemisphere. More than 200 papers were presented, and symposia were held on: Early Man in America; Comparative Studies in Peru; Middle American and Andean Relations; Origin and Relationships of the Eskimo; Population in Native America; Language and Culture; Afro-American Studies; and Modern Indian, Mixed and Creole Cultures. F. G. Rainey headed the organization committee which planned the congress, of which A. L. Kroeber was elected president. A special exhibit at the museum, arranged by Gordon Ekholm, Robert von Heine-Geldern and Carl Schuster, demonstrated striking parallels in art and material culture between America and the far east and raised anew the question of trans-Pacific influences in western America, something which most North American anthropologists had formerly rejected.

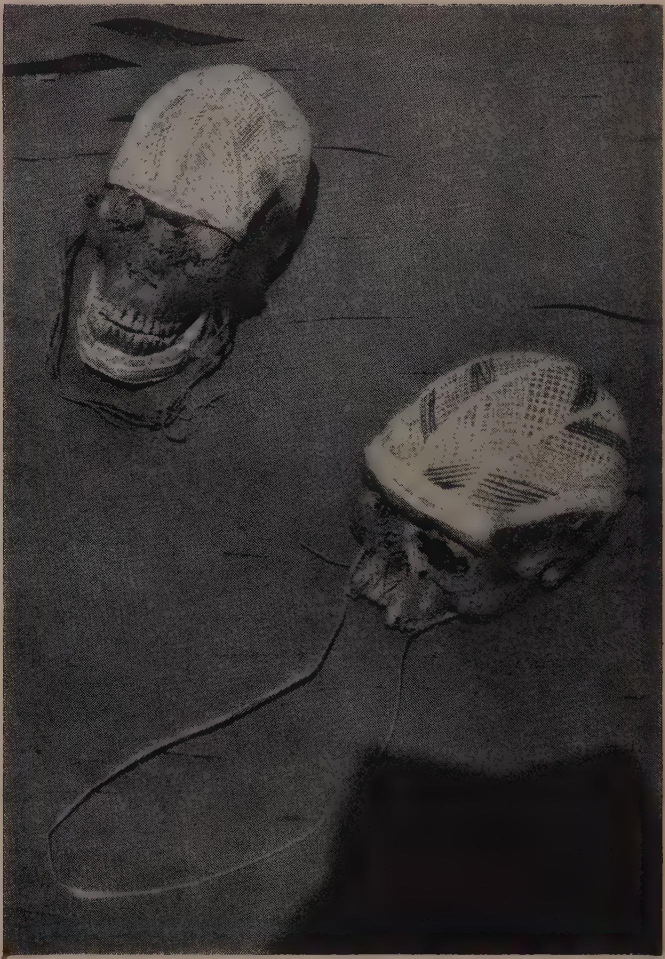
Anthropological problems and needed research programs for the Pacific area were among the subjects discussed at the Seventh Pacific Science congress which convened in Auckland and Christchurch, New Zealand, in February and March, after an interruption of ten years occasioned by World War II.

In London the International African institute began publication of a new quarterly review, *African Abstracts*, edited by Daryll Forde, carrying abstracts of current African publications in ethnology, social anthropology and linguistics. The Ethnographical institute of the Pázmány Péter university of Budapest, Hungary, issued a new journal, *Folia Ethnographica*, for the purpose of describing in English, French and Russian the results of Hungarian researches in ethnography. The American Association of Physical Anthropologists also began a new series, Studies in Physical Anthropology, under the editorship of W. W. Howells, the first number being a symposium, *Early Man in the Far East*, with papers on various aspects of Pleistocene geology, archaeology, palaeontology, and somatology by Hellmut de Terra, Hallam L. Movius, G. H. R. von Koenigswald, E. A. Colbert and Franz Weidenreich.

Two volumes bearing the title *Social Structure* appeared in 1949—a collection of essays edited by Meyer Fortes and a volume by G. P. Murdock. Basing his postulates on an analysis of 250 societies in all parts of the world, Murdock presented a new theory of the evolution of social organization and showed for the first time that human and social behaviour could be analyzed and predicted with a precision comparable to that in the exact sciences. Another study which marked a notable advance toward the goal of formulating regularities for cultural data was Julian H. Steward's "Cultural Causality and Law: A Trial Formulation of the Development of Early Civilizations." In this paper, published in the *American Anthropologist*, Steward showed that there had been parallel stages or eras, each with similar diagnostic features, in the development of early civilization in northern Peru, middle America, Mesopotamia, Egypt and China, and postulated the cause-and-effect relationships responsible therefor. Leslie A. White's series of papers on the evolution of culture, which had exercised a profound influence on anthropological thinking, were assembled in a volume *The Science of Culture; A Study of Man and Civilization.*

Works which reasserted the unique importance of anthropology and the other social sciences for the understanding of world problems included Clyde Kluckhohn's prize-winning book *Mirror for Man; The Relation of Anthropology to Modern Life* and Alexander H. Leighton's *Human Relations in a Changing World; Observations on the Use of the Social Sciences.* Robert Endleman criticized the claims of anthropology as expressed by these and other authors in an essay "The New Anthropology: The Science of Man in Messianic Dress," published in *Commentary.*

An unusually large number of important descriptive works in ethnography were published in 1949. Among these were *The Bella Coola Indians*, by T. F. McIlwraith; *The Comparative Ethnology of South American Indians*, vol. 5 of the Handbook of South American Indians, edited by Julian H. Steward; *The Lapps*, by Bjorn Collinder; *Palauan Society, A Study of Contemporary Native Life in the Palau Islands*, by Homer G. Barnett; *Majuro, A Village in the Marshall Islands*, by Alexander Spoehr; *Culture and Ethos of Kaska Society*, by John J. Honigmann; *The Bantu of North Kavirondo*, by Günter Wagner; *The Tenetehara Indians of Brazil*, by Charles Wagley and Eduardo Galvão.



PAINTED SKULLS used in ceremonial dances by natives of Milingimbi in the Crocodile Islands. These were among thousands of anthropological specimens being catalogued in 1949 following an expedition to Arnhem Land, Austr., sponsored jointly by the Smithsonian institution, the National Geographic society and the Australian government

Other important publications of the year were *History of the Primates: An Introduction to the Study of Fossil Man*, by W. E. Le Gros Clark; *External Morphology of the Primate Brain*, by Cornelius J. Connolly; *The Anthropology of Iraq*, part 1, no. 2, *The Lower Euphrates*, by Henry Field; *Tepexpan Man*, by Hellmut de Terra, Janier Romero and T. D. Stewart; *The Web of Kinship among the Tallensi*, by Meyer Fortes; *Social Class in America*, by W. Lloyd Warner; *Magic, A Sociological Study*, by Hutton Webster; *Male and Female*, by Margaret Mead; *General Anthropology* and *Primitive War: Its Practice and Concepts*, by H. H. Turney-High; *Law and Government of the Grand River Iroquois*, by John A. Noon; *The Social and Religious Life of a Guatemalan Village*, by Charles Wagley; and *Primitive Money in Its Ethnological, Historical and Economic Aspects*, by Paul Einzig.

There was a marked increase in field investigations during 1949, made possible principally by grants from the Fulbright fund and other organizations such as the Viking fund, Guggenheim foundation, Social Science Research council, National Re-

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search council and Arctic Institute of North America. Fred Eggan of the University of Chicago began a survey of social organization and culture in the mountain provinces of Mindanao and Visayan Islands in the Philippines. Another Philippine research project was that of Grace L. Wood, who undertook ethnological studies among the Negritos and other primitive groups on Negros Island.

W. C. Pei of the Cenozoic research laboratory, Peking Union Medical college, resumed excavations at Chou Kou Tien in search for further remains of Peking man. Carleton Coon made anthropological and archaeological studies in Iraq, and J. Lawrence Angel studied skeletal collections at Nikosia, Cyprus and Athens in continuation of his research on the biological history of ancient and modern Greece.

David G. Mandelbaum of the University of California returned to southern India to resume his ethnological work with the Kota people in the Nilgiri area. Morris E. Opler also undertook research on village life in India. Alexander Spoehr began a year's program of anthropological research for the Chicago Natural History museum on Saipan and the other Mariana Islands. His program included study of cultural change among the native Chamorros and archaeological excavations to determine how the islands were originally peopled. The Pacific Science board of the National Research council continued its Micronesian investigations, with I. Dyen studying linguistics on Yap, and Ann Meredith making a study of the socialization process in the Truk area.

The Peabody museum of Harvard's Aleutian expedition, directed by William S. Laughlin, continued its archaeological, anthropological and linguistic investigations on Umnak and islands to the westward. Frederica de Laguna began an ethnological and archaeological survey of the northern Tlingit country in southeastern Alaska as part of an integrated study of the origin and development of Tlingit culture. A notable accomplishment in the field of arctic anthropology was the independent discovery of pre-Eskimo cultural remains by J. L. Giddings at Cape Denbigh on Norton sound, by Helge Larsen in the interior of Seward peninsula and by Ralph Solecki on the north slope of the Brooks range in the interior of northern Alaska. Information on the distribution and movements of prehistoric Eskimo population in the little known northern part of the Canadian arctic archipelago resulted from H. B. Collins' excavation of old village sites on Cornwallis Island.

Robert Broom and J. T. Robinson reported in *Nature* the discovery of a lower jaw, probably of Lower Pleistocene Age, from the cave at Swartkrans, South Africa, which earlier had yielded remains of the huge ape man, *Paranthropus crassidens*. The jaw resembled that of Heidelberg, though smaller. It was described as intermediate between true man and the Australopithecinae and was given the name *Telanthropus capensis*. A detailed study of the pelvis of *Australopithecus prometheus* by Raymond A. Dart, published in the *American Journal of Physical Anthropology*, emphasized its human character, the pelvis in some respects being intermediate between that of Bushman and Bantu. In the same journal Howard M. Kern and William L. Straus, Jr., expressed an opposing viewpoint regarding *Plesianthropus transvaalensis*, another of the Australopithecinae. The *Plesianthropus* femur, they found, was as close to that of the cercopithecid monkeys as to man.

The fossil skull fragments discovered by Mlle. G. Henri-Martin in the Fontéchevade cave, Charente, France, were described in the *American Journal of Physical Anthropology* by Henri V. Vallois, who concluded that they were non-Neanderthaloid and representative of an older human line which, beginning with Piltdown and Swanscombe, led on to *Homo sapiens*. Meanwhile, another European fossil was removed from the list of man's early ancestors when M. F. Ashley Montagu and Kenneth P. Oakley showed that the Galley Hill skeleton, from Kent, England, was a post-Pleistocene burial.

The Viking fund medals and prizes for distinguished work in anthropology were awarded to John R. Swanton, ethnology; Adolph H. Schultz, physical anthropology, and Alex D. Krieger, archaeology. (*See* also ARCHAEOLOGY.) (H. B. Cs.)

Antibiotics: *see* BACTERIOLOGY; CHEMISTRY; CHEMOTHERAPY.

Antigua: *see* LEEWARD ISLANDS.

Antihistamines: *see* ALLERGY; CHEMOTHERAPY; COLD, COMMON.

Antimony: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Antitrust Law: *see* LAW.

Apples: *see* FRUIT.

Apricots: *see* FRUIT.

Aqueducts.

The world's largest system of aqueducts, canals, dams and storage reservoirs is provided by the program of the United States bureau of reclamation for multipurpose use of the water resources in the river basins of 17 western states. The man-made waterways include thousands of miles of canals, ditches, tunnels, siphons and pipe lines, and the world's largest and highest concrete dams.

An all-time record of construction was set by the bureau during 1949 in carrying forward its work schedule for man-made waterways, a $250,000,000 expenditure being 40% greater than the previous year's outlay.

On the Colorado-Big Thompson project in Colorado, construction contracts were completed during 1949 for the 1.3-mi. Rams Horn tunnel, the 2.47-mi. Prospect Mountain tunnel and conduit and the 1.3-mi. Aspen Creek conduit and siphon, all within the 14-mi. Estes-Foothills aqueduct and power system. This system has an initial diversion capacity of 550 cu.ft. of water per second.

On the Columbia Basin project in central Washington, the bureau of reclamation had under construction several large canals. The 1.6-mi. Feeder canal was to have a capacity of 16,000 sec.-ft., making it the nation's largest irrigation canal. Columbia river water stored in Lake Roosevelt behind Grand Coulee dam was to be lifted 280 to 360 ft. by giant pumps and discharged into the Feeder canal which leads to a 27-mi. long reservoir. From there, the water would flow by gravity through siphons, tunnels, an artificial lake and the Main canal to be used for the irrigation of about 1,000,000 ac. of land beginning about 40 mi. south of Grand Coulee dam. Other canals under construction on this project included the 88-mi. West canal and the 130-mi. East Low canal which was to branch from the Main canal. Construction was completed on Long Lake dam and a 5.5-mi. section of the Main canal during the year.

The Central Valley project in California, when completed, would consist of a network of canals, including the Friant-Kern and the Delta-Mendota, to carry irrigation water to farms and cities. The 153-mi. Friant-Kern canal would convey 5,000 sec.-ft. of San Joaquin river water from back of Friant dam near Friant, Calif., to farmlands as far south as the Kern river near Bakersfield, Calif. The Delta-Mendota canal would carry 4,600 sec.-ft. of Sacramento river water from the San Francisco bay area southward 120 mi. along the San Joaquin river and discharge it into the San Joaquin at Mendota, Calif., thereby providing irrigation water to replace that diverted into the Friant-Kern canal.

During 1949, construction contracts were completed covering 23 mi. of the Delta-Mendota canal, 51 mi. of the Friant-Kern canal, Clayton and Ygnacio canals and the final section of the Contra Costa canal.

The 125-mi. Coachella canal, with an initial carrying capacity of 2,500 sec.-ft. of water, branches from the 80-mi. All-American main canal near the Mexican border, about 20 mi. west of Yuma, Ariz., extends in a northwesterly direction past the Salton sea and terminates near Indio, Calif. The final sections of this canal had been completed and placed in limited use pending completion of the lateral distribution system, which was under construction in 1949.

The All-American canal is the largest irrigation canal in operation in the United States. It is 232 ft. wide at the water surface, 160 ft. wide at the bottom and 20.6 ft. in depth, with a maximum diversion of 15,155 cu.ft. of water per second.

Final stages of construction were reached during the year on the 41-mi. Salt Lake aqueduct on the Provo River project in Utah, which was to transport nearly 100,000,000 gal. of water daily from Deer Creek reservoir to the vicinity of Salt Lake City for industrial, municipal and irrigation purposes. (*See* also CANALS AND INLAND WATERWAYS; DAMS; IRRIGATION; TUNNELS.) (M. W. Ss.)

Arabia. A peninsula of Asia of approximately 1,027,000 sq.mi. with a total population estimated at 9,526,000, Arabia consists politically of two independent Arab states, Saudi Arabia and Yemen (*q.v.*), the independent sultanates of Oman and Masqat or Muscat; the autonomous sheikhdoms of Bahrein, Kuwait, Qatar and the Trucial sheikhdoms; and Aden colony and protectorates (*q.v.*). Religion: overwhelmingly Moslem (Sunni). Language: Arabic.

Saudi Arabia.—Area: *c.* 597,000 sq.mi. (excluding the Rub' al-Khali desert covering approximately 193,000 sq.mi.); pop. (mid-1948 est.): 6,000,000. Chief towns: Riyadh (cap., 60,000); Mecca (150,000); Medina (45,000); Jedda (40,000); Hufuf (31,500). Ruler, King 'Abd-al-'Aziz Ibn-'Abd-al-Rahman Ibn-Faisal Ibn-Sa'ud.

History.—The United States and Saudi Arabia announced on Jan. 21, 1949, that they had agreed to raise the status of their respective missions to the rank of embassies. The U.S. aircraft carrier "Tarawa" paid a good will visit to Jedda in January. The agreement with the U.S. regarding the use of Dhahran air base was extended temporarily on March 15 pending final negotiations.

The economic development of the country continued. Oil production during Jan.–July 1949 averaged over 2,000,000 metric tons a month (not far short of that of Iran). On this the Saudi government received royalties at the rate of $50,000,000–$60,000,000 yearly. On March 4 it was announced that a U.S. company, the Pacific Western Oil corporation, had obtained an oil concession covering Saudi Arabia's undivided half interest in the Kuwait-Saudi neutral zone. A first year's minimum royalty of $1,000,000 was paid over on Feb. 21.

A large number of U.S. and some British engineers and specialists, together with skilled men from Moslem countries, were employed on public works, including rail and port construction, roadmaking, an electricity installation in Mecca and a broadcasting transmitter at Jedda.

Egypt was asked in May to assist in forming a customs administration and in August to lend some professors to act as educational inspectors.

A trade treaty with Egypt, valid for one year, was signed in Cairo on May 31. It was on the basis of most-favoured-nation treatment and had annexed to it a payments agreement. It provided, too, for a permanent exhibition of Egyptian products at Jedda.

SKILLED ARAB WORKER taking instrument readings at an Arabian American Oil company plant in Ras at Tannura, Saudi Arabia. As a result of increased training facilities, more and more Arab labour was available in 1949 for manning complicated oil refining equipment

In Arab league politics King Ibn-Sa'ud generally supported Egypt. (C. He.)

Oman and Masqat.—Area: *c.* 65,000 sq.mi. Pop. (mid-1948 est.): 830,000. Ruler: Sultan Sayyid Said bin Taimur.

Bahrein.—Area: 213 sq.mi. Pop. (mid-1948 est.): 125,000. Ruler: Sheikh Sir Sulman ibn Hamad al Khalifah.

Kuwait.—Area: *c.* 9,000 sq.mi. Pop. (mid-1948 est.): 120,000. Ruler: Sheikh Sir Ahmed ibn Jabir al Subah.

Qatar.—Area: *c.* 4,000 sq.mi. Pop. (mid-1948 est.): 16,000. Ruler: Sheikh Abdullah ibn Jasim al Thani.

Trucial Sheikhdoms.—Area: *c.* 16,000 sq.mi. (including the sheikhdoms of Shargah, Ras al Khaimah, Umm al Qawain, Ajman, Debai, Abu Dhabi and Kalba). Pop. (mid-1948 est.): 105,000.

Finance.—The monetary unit is the Saudi rial, nominally equal to R. 1 (Indian), which fluctuates strongly. The recognized standard is the George V gold sovereign. The chief sources of revenue are oil royalties (more than £20,000,000 yearly) and pilgrimage dues (1946 est. £1,600,000).

Transport and Communications.—Licensed motor vehicles (Dec. 1948): cars 3,990, commercial vehicles 5,000. Air transport (1947): miles flown 774,453, passengers flown 18,663.

Industry.—Crude oil production: 19,260,000 metric tons in 1948; 12,410,000 metric tons in first six months of 1949.

Oil production in Kuwait reached 45,000,000 bbl. in the first 6 months of 1949, against 47,000,000 bbl. in 12 months of 1948.

Arab League: *see* ARABIA; EGYPT; IRAQ; JORDAN; LEBANON; PALESTINE; SYRIA.

Archaeology.

Western Hemisphere.—There were substantial gains in knowledge of the archaeology of the western hemisphere during 1949. An outstanding event was a demonstration of the system of dating certain kinds of archaeological remains by means of the radioactivity of the carbon isotope, Carbon 14. The method was developed by W. F. Libby and James Arnold of the University of Chicago. By measuring the radioactivity of the carbon isotope in wood, charcoal, shell, horn, ivory and vegetal remains found in ancient archaeological sites, the age of the site may be determined. A number of sites in the western hemisphere had been dated by the radiocarbon method.

The 1948 Viking Fund medal for archaeology was awarded to Alex D. Krieger of the University of Texas, Austin, Tex.

Arctic Area.—Under the auspices of the Smithsonian institution and the National museum of Canada, Henry B. Collins assisted by J. P. Michea excavated a number of ancient Eskimo sites on Resolute bay, Cornwallis Island, in the heretofore archaeologically unknown Canadian Arctic archipelago. Ruins of four villages of 6 to 14 well preserved houses of Thule culture type were excavated. More than 1,000 characteristic Thule artifacts were excavated from the houses and middens. A number of fine examples of pictographic art were obtained as well as a style of composite pottery and stone lamp previously unknown. The excavations revealed that bowhead whales and driftwood were abundant at the time of the Thule occupancy although they have been absent from the region in modern times.

A joint expedition of the Danish National museum and the University of Pennsylvania museum conducted archaeological investigations at several sites on the Seward peninsula in Alaska. The expedition was led by Helge Larsen assisted by Charles Lucier. A previously unknown phase of Ipiutak culture was found beneath a late Eskimo village midden at Cape Spencer. Iron knife blades and elaborate carvings of ivory were found in the Ipiutak levels. Two sites were excavated at the Deering airfield. One of these sites was western Thule, the other was Ipiutak with artifacts identical with those of the type site at Point Hope. In a limestone cave 30 mi. from Deering, stratified deposits revealed a sequence from what may be pre-Eskimo culture to recent Eskimo culture in the uppermost levels.

With a grant from the Arctic Institute of North America, Louis Giddings of the University of Alaska continued his excavations at Nukleet and Iyatayet on Cape Denbigh in Norton sound, Alaska. Excavations at Nukleet were carried through the permafrost to bedrock revealing several stages of Eskimo culture. The oldest level showed relations with Early Punuk or Birnirk cultures. Quantities of well-preserved artifacts made of organic materials were found.

At Iyatayet the upper layers contained artifacts similar to those found at Nukleet. In the lower levels Ipiutaklike artifacts of flint were found. And underneath the site, sealed by a sterile layer of sandy clay was a thin, bottom deposit containing nearly 1,000 chipped stone artifacts. Included in the lithic complex were burins and lamellar knives of styles known from the old world and additional types of artifacts known from Folsom or Yuma horizons in the western states. With the Folsom and Yumalike materials was a fluted point and a broken blade of the type known as "oblique Yuma."

Ralph S. Solecki of the Smithsonian institution undertook an archaeological reconnaissance in northwestern Alaska for the U.S. geological survey in co-operation with the office of naval research. From the foothills of the DeLong mountains to the Arctic ocean at Point Lay 192 sites were located along the drainages of the Kukpowruk and Koklik rivers. Two sites yielded polygonal cores and lamellar flakes that were believed to be of ancient types.

Supported by a grant from the Arctic Institute of North America and a fellowship from the Viking fund, Frederica de Laguna spent the summer in archaeological and ethnological investigations of the Tlingit area of southern Alaska. A large number of villages and refuge island forts were located and it was found that the original population of Yakutat was Eyak, and not Tlingit as generally supposed.

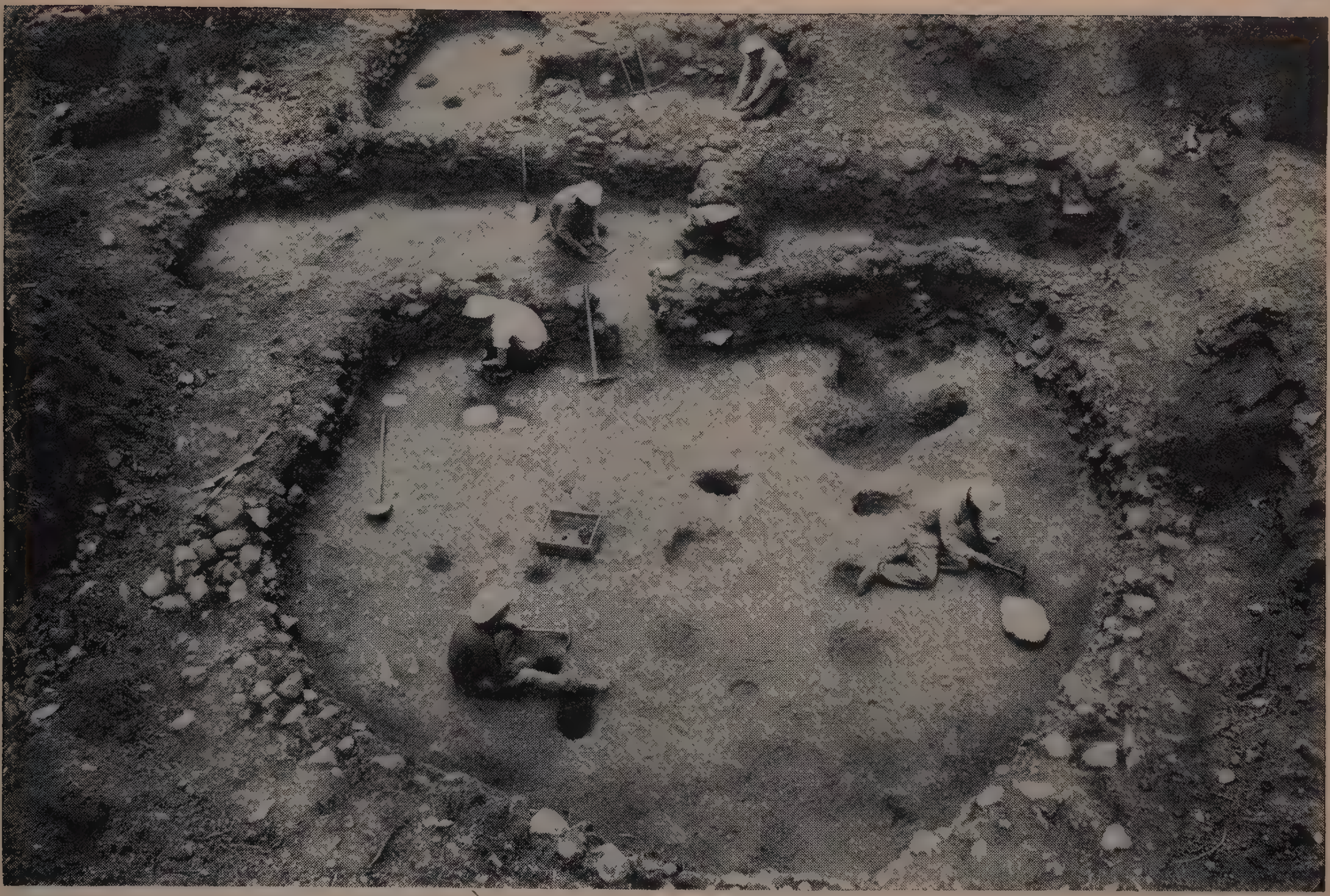
As part of the Harvard university anthropological project in the Aleutian Islands, archaeological investigations were undertaken under the direction of William Laughlin. Excavations were made at sites on Clam lagoon, Adak; at Nikolski on Umnak; and at Nurder point on Attu. At least two periods of Aleut culture were recognized and Ales Hrdlicka's idea that there were two morphological types involved in the peopling of the Aleutians was confirmed.

Richard S. MacNeish made an archaeological survey along the Mackenzie river from Fort Providence to Norman Wells, the east shore of Great Slave lake, the area east of Great Bear and Great Slave lakes, and the Lake Athabaska region. More than 30 sites were discovered and three recurring lithic assemblages were represented.

Eastern North America.—A student field party sponsored by the Illinois State museum and the University of Chicago investigated sites in the Starved Rock area, La Salle county, Ill. This field party was directed by Kenneth G. Orr of the University of Chicago. Excavations were undertaken in five different sites containing cultural assemblages ranging from paleo-Indian through early and middle Woodland and Upper Mississippi to historic.

Under the direction of Raymond Baby assisted by Robert Goslin, an Ohio State museum field party excavated two sites in Ohio during the summer. A large Adena mound in the Cowan Creek reservoir area contained 18 burials, some in log tombs and one in a subfloor pit. Beneath the mound was a circular house pattern of paired post moulds. Pottery, other artifacts and food refuse were associated with the house. In the Delaware dam area a communal burial in a glacial kame was excavated. Fragments of charred fabric and artifacts of stone, copper and shell were recovered.

Under the auspices of the National museum of Canada,



ROOMS of a pueblo house outlined by the remains of its stone walls, as unearthed by archaeologists of the Chicago Natural History museum in the summer of 1949. Dating from about A.D. 900, it was the earliest-known example of a masonry house in the region of western New Mexico

Thomas E. Lee conducted an archaeological survey during the summer along the north shore of Lake Erie. He recorded 88 sites, at least 14 of which were nonceramic.

A field party led by William A. Ritchie worked in eastern New York under the joint sponsorship of the Rochester museum and the New York State museum. The party explored an early Mohawk site in the Schoharie valley where Owascolike chipped stone artifacts were associated with Mohawk type pottery. In the same valley an early Owasco site was partly excavated; late period Owasco sites were not found.

Another and larger early Owasco site was excavated at west St. Johnsville in the Mohawk valley. The pottery exhibited the use of the linear punctating or interrupted incising technique for applying decoration. This technique might foreshadow the incising technique of Iroquois potters.

William S. Fowler of the Attleboro museum undertook investigations of two sites in New England. He assisted the Narragansett Archaeological society of New England in completing excavation of a stratified shell midden containing a prepottery, steatite bowl occupancy beneath a pottery-agriculture level. At the Nunkatuset site in the Taunton River basin in Massachusetts evidence of three cultural horizons was found: earliest level marked by ulus, plummets, ground slate objects and grooveless stemmed gouges; middle level marked by steatite bowls; and top level characterized by pottery.

The summer school of the department of anthropology of the University of Georgia undertook investigations in the lower Flint and Chattahoochee valleys, under the direction of A. R. Kelly. A large midden site revealed a Weeden Island occupation overlying a Swift Creek occupancy.

Under the direction of John L. Champe the laboratory of anthropology of the University of Nebraska undertook excavations at White Cat village and at Sterns creek. White Cat village was a manifestation of the Dismal river culture which is associated with Lipanan Apache. The revised Sterns creek chronology was as follows: an ancient preceramic culture followed by Sterns creek culture which was followed by Hopewellian and the Nebraska culture latest.

Southwestern United States.—The University of Utah field school of archaeology under the direction of Jesse D. Jennings made an archaeological survey of the upper Virgin river area in Washington county, Utah, and excavated the Jukebox and Danger cave sites near Wendover in Tooele county. The caves contained ancient preceramic cultures overlain by cultures with pottery.

The Upper Gila expedition of the Peabody Museum of Archaeology and Ethnology, Harvard university, under the direction of J. O. Brew carried out archaeological survey and excavation of sites in west central New Mexico about 40 mi. south and east of Zuni pueblo. A Pueblo II and a large Pueblo III site were excavated.

A field party from the University of New Mexico directed by Frank Hibben carried out excavations at a Gallina site at Rattlesnake Point, 12 mi. south of El Vado, New Mexico.

Under the direction of Paul Reiter the personnel of the University of New Mexico's summer field session in archaeology investigated a number of sites in the Albuquerque region.

Under the auspices of Gila Pueblo museum Deric O'Brien excavated a late Reserve Phase pueblo site near Quemado, New Mexico.

From June to September the Southwestern Archaeological expedition of the Chicago Natural History museum excavated sites in the Pine Lawn valley near Reserve in western New Mexico. The expedition was directed by Paul S. Martin assisted by John B. Rinaldo. Work of the expedition included the excavation of three pueblo sites of the Reserve Phase (Pueblo II); of four early Mogollon pithouses; and the excavation of a Cochise occupation floor. The Cochise loci on Wet Leggett arroyo were investigated as in previous years and Ernst Antevs continued his geological studies of ancient sites and chronology in the Pine Lawn basin.

Financed by a grant from the graduate school of the University of Illinois and a grant from the Viking fund to the Museum of Northern Arizona, a field party led by John C. McGregor investigated more than 12 sites of the little known Cohonina culture (a branch of the Patayan Root) in northern Arizona. Half of the summer was spent in the field and the other half spent in the Museum of Northern Arizona laboratory at Flagstaff. The Cohonina sites ranged in age from the 8th to the 11th centuries of our era.

The University of Arizona's archaeological field school held its regular session at the University's station at Point of Pines in a remote part of the San Carlos reservation in eastern Arizona. A number of early Mogollon pit houses were excavated and investigations were continued in a Pueblo III ruin. The work of the field party was directed by Emil Haury, E. B. Sayles and J. B. Wheat.

Pacific Coast.—Under the direction of Douglas Osborne assisted by Joel Shiner, seven sites in the McNary reservoir of Oregon were investigated for Washington State college and the Smithsonian River Basins survey. Buried middens or the bottom levels of deep middens produced artifacts of basalt and of a different style.

From June 20 to Sept. 8 six regular field parties of the California archaeological survey and the department of anthropology of the University of California carried out archaeological investigations in 18 sites, recorded 150 previously unknown sites, excavated 109 burials and collected about 30,000 artifacts.

A party directed by Clement Mughan undertook excavations in a shell mound at Drakes bay in search of Caucasian artifacts derived from a Spanish galleon wrecked there in 1595.

William S. King made a six-weeks archaeological survey in the northern district of Baja California. Pottery producing sites were found to increase in number and size away from the ocean and toward the San Felipe desert. In the north most sites were historic. A number of pure lithic sites were found in the interior valleys.

Under the direction of J. Bennyhoff, a field party salvaged archaeological data from a midden near Carpinteria in Santa Barbara county. Two cultures were uncovered, one related to the Oak Grove horizon, the other belonging to the Hunting horizon.

An emergency excavation in a large shell mound on Bodega bay, Sonoma county, directed by Franklin Fenenga revealed a pure cultural manifestation of the McClure facies of the Middle horizon.

During July and August, A. F. Riddell and W. Evans made an archaeological survey of Honey Lake valley in Larsen county, and located 75 sites and collected about 1,000 specimens.

Under the direction of M. R. Harrington a Southwest museum field party carried out excavations in the Pinto site at Little Lake, Inyo county, Calif. Two circular houses, the largest 12 ft. in diameter, were outlined by post holes. The site produced many Pinto points and some Lake Mohave and Silver Lake types, along with scrapers, gravers, crude metates and manos.

Middle America.—In Mexico the many archaeological activities of the National Museum of Anthropology, the Institute of Anthropology and History and the Direction of Prehispanic Monuments continued. Among the numerous projects of these government institutions were investigations at Teotihuacan and Xochicalco, at the middle archaic period site of Tlatilco, and clearing and restoration of the Mayan site, Palenque.

Under the sponsorship of the Carnegie Institution of Washington, George Brainerd spent six months in Yucatan and Campeche where he studied the stratigraphic sequence of Maya pottery types in a series of sites lying between the central and northern Maya areas.

In the early part of the year Edwin N. Ferndon of the School of American Research completed an archaeological survey of the Pacific coast of Chiapas, Mex.

During the first half of the year, Richard S. MacNeish continued survey of excavation in Tamaulipas, Mex. Excavations were made in more than 12 sites including a series of caves along the Canyon Diablo in the Sierra de Tamaulipas. The sites revealed a sequence of cultures ranging from prepottery to late Huastecan. This work was financed by the Viking fund.

Under the sponsorship of the Chicago Natural History museum, the University of Chicago and the Arizona State museum, Donald Lehmer made an archaeological survey of Sonora, Mex. A number of prepottery sites were located and several pottery traditions were recognized. It was concluded that pottery bearing sites were quite late in most of Sonora.

The Peabody Museum-Harvard University expedition to Costa Rica, directed by S. K. Lothrop, made a survey of the southern Pacific plains on lands of the United Fruit company. Testing of stratified deposits revealed three periods of ceramic styles. The early style was reminiscent of Amazon valley pottery and the intermediate style might be ancestral to both classical Chiriqui and classical Cocle.

South America.—Financed by a grant from the Viking fund and a Cutting fellowship from Columbia university, Mr. and Mrs. Clifford Evans, Jr., undertook archaeological investigations in the lower Amazon basin of Brazil. Mounds on central Marajó Island were excavated. Three mounds of the Monte Carmelo group along the Rio Anajas were investigated and 20 village mounds and one cemetery mound were excavated in the Igarapé Os Camutins in the headwaters of the Rio Anajas.

These investigations revealed six separate phases of occupation in the islands of Marajó, Mexiana and Caviana and two additional phases in the territory of Amapá.

Under the direction of Luis Duque Gomez, the Colombian government's Instituto Ethnologico y de Arqueologia continued its broad program of archaeological surveys in Colombia. Included in the projects of the institute were the following: excavations in Sibate, Cundinamarca by Rafael Reyes Parga; an archaeological survey of the department of Magdalena by Blanca Ochoa Sierra and Joaquín Parra Rojas; investigations of the Pueblito site in the Santa Marta area by G. Reichel-D.; and emergency excavation of a rich tomb of the San Augustín culture. (G. I. Q.)

Eastern Hemisphere.—For old world archaeology, the year 1949 continued the marked postwar acceleration in field work already noted in 1948. The news summaries contained in the *American Journal of Archaeology*, the British *Archaeological News Letter* and the *Bulletin de la Société Préhistorique Française* became increasingly detailed, and even the number of tantalizingly brief notes on archaeological activity behind the "iron curtain" increased. The writer restricts himself here to what he considers the more important archaeological events of the year.

A basic contribution to the study of Pleistocene chronology appeared—H. L. Movius' paper on Villafranchian stratigraphy in the *Journal of Geology.*

Pleistocene Prehistory.—The most spectacular find of the year was the "portrait" head of a bearded man, found in Magdalenian context in the rock-shelter of Angles-sur-l'Anglin, in

PORTAL LION of black basalt with Phoenician inscription, dating from about 730 B.C., which was excavated at Karatepe, Turkey. Findings of the expedition, headed by Helmuth Th. Bossert of the University of Istanbul, were published in 1949 and included bilingual inscriptions (Old Phoenician and Hittite hieroglyphics), which were expected to yield a key to previously undecipherable Hittite hieroglyphic texts

central France, by Dorothy Garrod of Cambridge university. Human beings were only rarely known in the cave-art repertoire, and when found, were usually rough, sketchy, self-conscious delineations. The Angles-sur-l'Anglin man was almost life size, and was carefully rendered, in profile, in a combination of relief sculpture, painting and engraving. A very fine head of an ibex, in relief, also came from the same deposit. The year 1949 also saw the arrival of the key publication on *Lascaux*, by F. Windels, and the publication, as well, of the remarkable engraved pebble, found in 1948 at the rock-shelter of La Colombière, by H. L. Movius, Jr., of the Peabody museum, Harvard university. The fine Lascaux cave paintings (found during the occupation) and the La Colombière engraved pebble were both pre-Magdalenian; taken together with the Angles-sur-l'Anglin head, they might be considered the starting point for a new and much needed resynthesis of late Pleistocene art.

Work of considerable interest continued in Africa. In the north, C. Arambourg found, at a site called Ain al-Hanech, a homogenius group of "boules" or "bolas," in a context which was very early Pleistocene (probably Villafranchian—first glacial). Few details were available on this find, but it appeared that they might be the earliest stone tools known anywhere in the world produced according to a persistent habit. The Tufts College-American School of Prehistoric Research expedition, under Hugh Hencken, also worked in North Africa, particularly at Kouali in Algeria, where a continuous sequence from early postglacial to Roman times was excavated in conjunction with detailed geological studies of the ancient Mediterranean shore lines. For Cyrenaica, a region of crucial importance for an understanding of prehistoric interrelationships between Egypt and northwest Africa but hitherto little known, W. Watson reported the results of an important survey made by C. B. M. McBurney of Cambridge university. Traces of the major North African industries appeared, but the blade-tool situation remained somewhat unclear, and proper geometric microliths were very rare. A. J. Arkell's definitive works on *The Old Stone Age in the Anglo-Egyptian Sudan* and on "mesolithic"-"neolithic" *Early Khartoum* appeared, and Arkell continued his work in the Sudan; at a site called Esh Shaheinab, materials comparable to the stage of the Fayum "neolithic" were recovered.

Great interest continued to focus on work in South African caves, especially those in the Makapansgat valley, Transvaal. While there were caves here with Pleistocene artifacts, the predominant interest had been with human palaeontological materials which had tended to appear without positive archaeological associations, despite some extravagant claims to the contrary. Some of the humanlike fossil finds indicated small beings, some large, and the associated faunas were different in many ways, indicating that the materials were of several ages. In a lecture to the Royal Anthropological institute in May 1949, Robert Broom admitted that evidence for the use of fire by *Australopithecus prometheus* was far from conclusive, and that while his beings "must have used sticks and stones as weapons or they could not have survived," said that he had seen no stone artefacts with them in spite of a close watch having been kept.

The most important early postglacial find in Europe was the Maglemosian site at Star Carr, Yorks., Eng., excavated under the direction of Grahame Clark of Cambridge university. The Maglemosian assemblage, which typified the changes made by the forest folk of northern Europe to suit their economy to a postglacial environment, had so far been best known from Scandinavia; Clark's work increased the available Maglemosian material in Britain more than tenfold and tapped what promised to be one of the richest of all Maglemose sites. Several layers of timber flooring (evidently placed along side the shore of a bog, by which the original dwellers lived) were cleared. The excavations yielded a variety of antler tools, stone beads, bits of amber, traces of birch-bark containers and flint tools, as well as much unworked organic material which would allow the reconstruction of the climatic history of the site.

The Near-Middle East.—Important work continued at Kanes (Kültepe) in Turkey, for the Turkish Historical Society, headed by Tahsin Özgüç. The "Karum" or trading centre of this town had a colony of Assyrian merchants living, more-or-less self contained, within the larger Anatolian town. Four building levels were encountered in an eight metre depth of deposit: the uppermost level was of the Hittite New Empire, the second level was of the later Assyrian merchant colony, level three contained the earlier Assyrian phase and the fourth level (on virgin soil) was "Hittite" but without trace of Assyrian merchants. Both the second and third levels had ended with catastrophic fires, both contained rich yields of artefacts and as many as 1,500 cuneiform tablets—many still in clay "envelopes" or covers which bore the impressions of cylinder seals—were recovered from these two levels. Some of the tablets of the second level had references to the Assyrian king Erišum, who reigned some 150 years earlier than the Babylonian Hammurabi.

In Egypt, the situation for foreigners remained somewhat restless because of the Palestinian troubles, and few Europeans or Americans were at work, save for those in the employ of the government Service des Antiquités. Happily, the Oriental institute's work in copying the temple reliefs at Luxor proceeded. The service itself was active. Abd Essalam M. Hussein continued his architectural clearances on the pyramid temple of Dadkare at Sakkara and in the two pyramids of Snefru at Dahshur, but at the end of the year came sad news of Abd Essalam's premature death by heart attack.

In Jordan, G. Lankester Harding (chief government curator of antiquities) and Père R. de Vaux (director, École Biblique et Archéologique, Jerusalem) conducted a test excavation in the cave where a goatherd accidentally found the "Dead sea scrolls" in 1947. The cave was relocated by an Arab legion search party by means of the newly turned soil; it was in desolate

CLAY "ENVELOPE" with inscription and seal enclosing a cuneiform tablet, excavated at Kültepe, Turkey, by archaeologists of the Turkish Historical society in 1949; the envelope dated from about 2,000 B.C.

foothills about seven miles south of Jericho, overlooking the Dead sea. Harding and Père de Vaux proved—by reclaiming many small fragments of inscribed leather, the inscriptions being like those of the available scrolls—that the cave was indeed the findspot of the "Dead sea scrolls." The traces of about 40 large jars of late Hellenistic date (which corresponded with the dates given the scrolls by most authorities on palaeographic grounds) were found. Unfortunately, the cave seemed to have been disturbed in ancient times; only eight scrolls were available, but Harding believed that each jar could have held five or six such scrolls. As indication that all of the Old Testament may once have been in the deposit the fragments reclaimed by Harding and Père de Vaux yielded scraps of the books of Genesis, Deuteronomy, Leviticus, Judges and Daniel. In 1949 four of the "complete" available scrolls were in E. K. Sukenik's hands in the Hebrew University of Jerusalem (they included an apocryphal book "The War of the Children of Light Against the Children of Darkness," a book of Hymns and Psalms and two which were as yet unrolled), and the other four were in the United States for publication by scholars of the American School of Oriental Research (these latter scrolls included the book of Isaiah, a commentary on Habakkuk, a book of ritual and part of the book of Enoch in Aramaic). Save for the Enoch, the scrolls were in post-Exilic Hebrew; some of the Harding-De Vaux fragments were in earlier Phoenicianlike Hebrew. Thanks to the painstaking clean-up of the cave by Harding and Père de Vaux, there could be no question of the authenticity of the scrolls, nor that their date was far removed from the early 1st century B.C.

In Syria, Claude Schaeffer was able to return for his 12th campaign at Ras Shamra-Ugarit, and D. Dikaios (curator of the Cyprus museum) commenced work on what had been identified as the town of Alasia, at Enkomi, Cyprus. A building of considerable size was cleared, and in it a fine bronze figure of a horned god (Nergal-Reshef-Apollo) was found. Historically, Alasia was the probable capital of Cyprus, as referred to in the Amarna correspondence of the 14th century B.C.

The endeavours of the directorate general of antiquities of Iraq were indicated in the current numbers of *Sumer*. The clearance of Tell Harmal, near Baghdad, was virtually completed by Mohammed Ali Mustafa, under the supervision of Curator Taha Bakir. It was at Tell Harmal that the directorate recovered the important law-code, and more texts were found in 1949. Fuad Safar was again in charge of the work at Tell Abu Shahrain, the important site of ancient Eridu, in the south. A final stratigraphic check was made in the core of the main north mound, and on a secondary mound not hitherto explored, a large building of the type of the "A" palace at Kish appeared, including fragments of Sumerian sculpture. Fuad Safar also made preliminary clearances on Tell al-Laham, a very large mound about 25 mi. southeast of Eridu, near the railroad. The mound was found to have been occupied from the Early Dynastic period down through Kassite times, and then sporadically through Neo-Babylonian times.

Two major foreign programs were under way in Iraq. A short introductory campaign, mainly of clearance of sand and debris from the old excavations, was begun at Nippur by D. E. McCown for the joint Oriental Institute (University of Chicago)–University Museum (University of Pennsylvania) expedition in the winter of 1948–49. Undisturbed materials were encountered in two areas; one proved to be Assyrian, the other probably Achaemenian. Work was resumed in the fall of 1949 under R. C. Haines, and earlier levels were reached, in which it was reported that cuneiform tablets of some importance had begun to appear. In March 1949, M. E. L. Mallowan, director of the British School of Archaeology in Iraq, commenced an equally long-range program at Nimrud, concentrating on the palaces of Shalmaneser III and Ashurnasirpal III. About 80 tablets and a variety of ivory inlays were recovered. The work of both these expeditions was important in more ways than one; they could in a sense be said to mark the resumption of old responsibilities. Nippur, a classic Sumerian site in the south was first worked by the University museum in 1887, while Nimrud, once capital of Assyria, in the north, was opened first by Sir Henry Layard in 1845.

In Iran, M. R. Ghirshman continued his work at the site of Susa, where the northwest foundations of the Achaemenid palace were cleared, and Graeco-Parthian, Sassanid and Arab materials were encountered otherwise. In the northwest, in the Azerbaijan area, T. Burton-Brown excavated a relatively long sequence of materials. The excavator was somewhat facile in claiming analogies for his artifacts, which he saw as covering the period from the Ubaid stage to the Cypriote or Aegean Iron Age, but there was no question but that he had discovered a very interesting group of antiquities from a very little known area. M. D. Schlumberger explored a group of Ghaznavid buildings at Lashkari Bazar, in Afghanistan, for the French Délégation Archéologique.

In Turkey, as well as the work at Kanes mentioned above, the year saw the close of Sir Leonard Woolley's important excavations at Tell Atchana—Alalakh, in the Amuq plain. In all, a magnificent sequence for the whole 2nd millennium B.C. had been gained, and important early village material, in the range of Amouq phase E was encountered on a small mound nearby, Tell es-Sheikh.

Classical Lands.—In Greece, where ECA aid had been granted to the museums, and much reconstitution had already been effected, the government's policy of allowing no new work but only the completion and conservation of old work was relaxed. The French school worked at Thasos, Delos and Delphi, the American school on the Athenian Agora, and New York university at Samothrace. The British school was active, but in Turkey, where it excavated a site near Izmir (Smyrna) jointly with the University of Ankara, this joint expedition recovered interesting prehistoric (*cf.* Troy I) and 7th century B.C. Greek materials. The Swedish school also worked in Turkey, at Carian Labranda, where traces of an unknown Carian script were found.

Europe.—The *American Journal of Archaeology* news section on Europe contained many details of postwar clearances and small finds, but little news of work in 1949. Work was continued on the large Viking site of Jarlshof, in the Shetland Islands, by the British ministry of works, with an idea of establishing stratigraphic subdivisions of house types in this important 9th century A.D. village. Informative materials for understanding the Roman and mediaeval towns of Canterbury, Eng., continued to come from excavations in that fifth of the modern "old city" which was destroyed in the air raids.

Very little later archaeological material was reported for the year 1949 from farther Asia or Africa. (*See* also ANTHROPOLOGY.)

Sources used in the preparation of this article, other than those specifically mentioned: *Antiquaries Journal, L'Anthropologie, Antiquity, Archaeology, Bulletin of the American Schools of Oriental Research, Illustrated London News, Journal of the Royal Anthropological Institute, Man, Nature, Proceedings of the Prehistoric Society, Sumer.* (R. J. B.)

Archery.

The 65th annual tournament of the National Archery association of the United States was held at Fond du Lac, Wis., Aug. 1–6, 1949, with 277 archers from 23 states and Canada participating. Thirty-three new national records were established. The champions and their scores were:

Target Archery

Men's championship			Russ Reynolds, Cleveland, O.	
	Scores:	Double York round	279–1,745*	
		Double American round	180–1,472*	3,217
Ladies' championship			Jean Lee, Greenfield, Mass.	
	Scores:	Double National round	144–1,080	
		Double Columbia round	144–1,178*	
		Double American round	180–1,422*	3,680
Boys' championship			Edward N. Berg, Jr., Salt Lake City, Utah	
	Scores:	Double Junior American round	180–1,442*	
		Quadruple Junior American round	360–2,880*	
Girls' championship			Grace Frye, Toledo, O.	
	Scores:	Double Columbia round	143–1,009	
		Double Junior American round	179–1,219	2,228

Flight Archery

Men	Regular style	Jack Stewart, Austin, Tex.	640 yd.*
	Free style	Paul Berry, Middletown, O.	719 yd. 2 ft.*
Ladies	Regular style	Blanche Stewart, Austin, Tex.	447 yd.
	Free style	Eunice Modlin, Evansville, Ind.	575 yd. 2 ft.*
Boys	Regular style	Edward N. Berg, Jr., Salt Lake City, Utah	447 yd.*
Girls	Regular style	Grace Frye, Toledo, O.	291 yd.

Clout Shoot

Men	(36 arrows at 180 yd.)	Walter Hissey, Baltimore, Md.	30–192
Ladies	(36 arrows at 140 yd.)	Ann M. Weber, Bloomfield, N.J.	36–242
Ladies	(36 arrows at 120 yd.)	Jean Lee, Greenfield, Mass.	36–252
Boys	(36 arrows at 120 yd.)	Michael Moga, Niagara Falls, N.Y.	36–230
Girls	(36 arrows at 120 yd.)	Christine Richards, Laguna Beach, Calif.	35–203

*Indicates new record.

The Minneapolis (Minn.) Archery club with a team of four won the men's team shoot event; their combined scores totalling 381–2,537. The Orioles of Baltimore, Md., won the ladies' team shoot with a score of 382–2,442.

A world's record was set for the men's international Long round when Russ Reynolds of Cleveland, O., shot the amazing score of 907, with 143 hits. This round was added to the regular events in 1949, replacing the English York which had been abandoned in England in favour of the American York round. Jean Richards of Laguna Beach, Calif., also established a world's record for the Hereford round with 143 hits for a score of 921. This round originated in England. At the 30-yd. distance of the Columbia round, Jean Lee of Greenfield, Mass., shot 23 perfect arrows out of a total of 24, thus setting a record of 214 out of a possible 216.

Two records were established by junior girls. Barbara Van Popering, Old Greenwich, Conn., age 13 yr., established a new national record of 90–648 in a Junior American round. Christine Richards, Laguna Beach, Calif., age 15 yr., established a new national record of 72–536 in a Columbia round.

Field Archery

Men's championship	Erwin Pletcher, Bakersfield, Calif.	2,508
Ladies' championship	Mrs. Henry Bitzenburger, Los Angeles, Calif.	1,816
Boys' championship	Edward N. Berg, Jr., Salt Lake City, Utah	1,824
Girls' championship	Christine Richards, Laguna Beach, Calif.	655

The National Field Archery tournament was held the first week of July in Pasadena, Calif.

The 66th national tournament of the National Archery association was to be held at Franklin and Marshall college in Lancaster, Pa., Aug. 7–12, 1950.

FILMS OF 1949.—*Archery for Girls* (Coronet Instructional Films). (O. U. C.)

Architecture.

Residential.—Early in the year 1949 there were signs that building costs in the United States might come down a bit, but as the year wore on, the decline proved to be very slight, and there appeared instead a general acceptance of higher prices as the apparently normal level. This resulted in an increase in the number of luxury buildings commissioned and sold, for the first time since the end of World War II. Houses of greater size and more lavishly equipped, costing roughly twice as much as similar ones had before the war, were being built. Similarly, new apartments on the Park avenues of the country were renting easily at high rents, partly because none had been built for so long and partly because of the wider acceptance of higher rents as the new normal. These units were not large in number of rooms; the trend to smaller and smaller residences reflected the continuous decline in the availability of domestic help. However, the rooms were often large and the units contained numerous features intended to compensate for fewer square feet, such as glass walls, terraces and usable balconies. Families with many children sought out older, roomier buildings, while small families moved into the new, more easily maintained, units. The architect was once more building private houses, often quite large, a situation which had been considered unlikely only a few years before. Stephen C. Pepper asserted that this phenomenon, a characteristic of the 20th century, reflected the general cultural trend to put more and more emphasis on the individual.

In all types of domestic architecture the trend toward one-story, open-planned houses continued. In the speculative field, the "ranch house" was the name generally used for the looser, freer character of these buildings. It seemed as though the public had in many instances swung from the Cape Cod cottage and colonial types into the ranch house without having stopped at the intermediate phase, the flat-roofed international style. Many of these ranch house units were deplorably lacking in restraint, in studied proportions, and, as usual in this class of building, played up the clichés of the moment. This led to some alarm that the new mood was too relaxed, that the discipline of materials and design had been too suddenly jettisoned for merchandising appeal. In spite of some optimistic opinions that a single widely accepted mode of building was at hand, the eclectic variety of taste and approach seemed hardly checked. Two buildings, of opposed concept, both widely published and visited, dramatized the extent of this range. Marcel Breuer's exhibition house, built in the garden of the Museum of Modern Art in New York city, was in sharp contrast to Philip Johnson's own house in near-by New Canaan, Conn. Breuer's house for a normal family was intended as a model house, a prototype; Johnson's as a unique, luxurious, week-end house. Breuer's was a single unit, multistoried, carefully planned to provide for the needs of a typical growing family at several stages in the growth of the family. It had a butterfly roof and used stone, wood and glass walls. Johnson's was made up of separate, wholly detached pavilions, in an extensive estate. Its principal building was entirely glass walled. Its austere intellectual design was at the same time poetic and moving. Breuer's house, although warmed by its use of more familiar and varied materials, nevertheless seemed, to some, to be inflexible and dogmatic.

The "pace setter" house sponsored by *House Beautiful* was noteworthy in three respects: it was an extensive application of the principles of climate control; it had a garden designed by Thomas D. Church which stressed eye-appeal during the winter months; and it glorified the gadget, the climax of an American state of mind, which can be expressed as the belief that "happiness comes through handy helps in the home."

Since 60% of building in 1949 was in the residential field, it was significant that new federal legislation was enacted to finance more public housing, about 200,000 units having been approved by the Public Housing administration by the end of the year. Congress, on the other hand, had not taken positive action to extend federal aid to housing in the medium-price bracket.

The two principal makers of prefabricated houses were searching for better ways in which to market their products. The small Gunnison houses seemed to be started on a sounder basis than the somewhat larger and more expensive Lustron house. The latter was the subject of much controversy. Lustron was not producing the expected volume; its prices were higher than anticipated; and it was losing money. There was, however, reason to think that Lustron would survive. It was inevitable that the first large-scale, factory-produced house would need time as well as capital to pioneer its way.

One of the large developers changed his model and attracted ready customers by such devices as placing the living rooms off the street, exposing girders, building fireplaces in brick with deeply raked joints and using natural shingles and large glass areas.

Techniques and Materials.—Increasing labour costs, which were higher than ever before and higher than anywhere else in the world, continued to force invention in techniques and materials. It should be noted, though, that in the United States the cost of building in 1949 as compared with 1939 had risen less than almost anywhere else in the world. British observers commented that the United States continued to lead the world in the use of building machinery, such as volume-mixers for concrete, thus offsetting some of the high costs of labour. Other steps in this direction noted during the year were the increasing use of larger wall panels, new and lighter sandwiches for walls, insulated precast-slabs and wider application of prestressing and of lightweight structural metal members. Radiant heating continued as a favourite system with wider application to driveways, terraces and pavements, and although it was recognized that the distribution of heat in this system was easily blocked by furniture such as desks and drafting tables, the advantages were on its side.

Aluminum was used as a substitute for conventional metals in the Alcoa building at Davenport, Ia., in designs for a proposed Alcoa building in Pittsburgh, Pa., and throughout an entire school in Bristol, England. It was suggested that the future of the material would develop more rapidly when its own characteristics were stressed. Stainless steel for exterior surfaces was used in several buildings and projected for others. The architectural uses of magnesium were not notably advanced. The trend toward lightening the weight and bulk of structures continued. Many experiments were made toward this general end, through wider application of lightweight aggregates and lightweight combinations of natural and synthetic materials. Buckminster Fuller's observation, 20 years before, that when structure became rational, buildings would be sold by the pound, seemed slightly nearer realization. The Building Research Advisory board moved toward centralizing and disseminating private research in building techniques and materials, while modular co-ordination seemed to be losing ground.

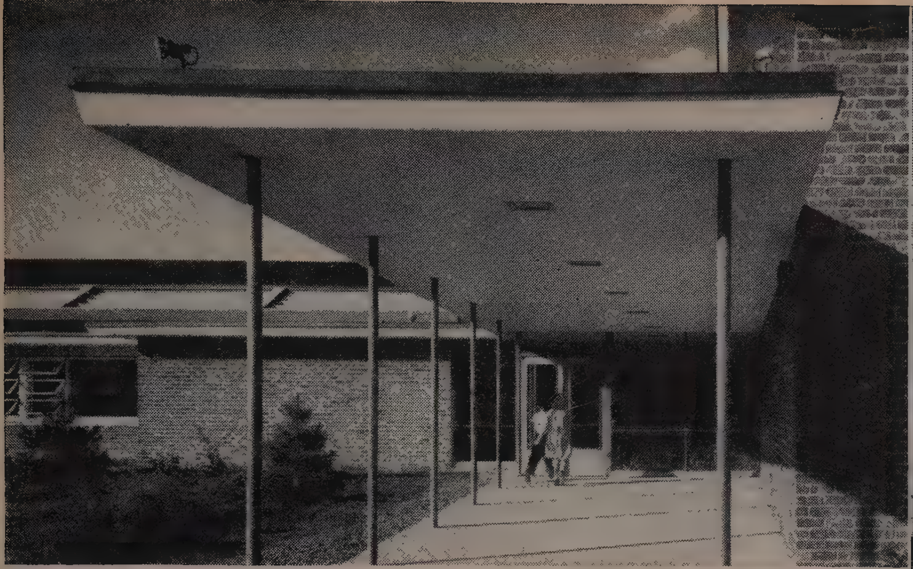
Commercial.—Perhaps as a by-product of greater costs and perhaps as a consequence of a longer period of familiarity with the modern approach to building design, the onset of a period of maturity in the design of commercial and industrial buildings could be detected. An outstanding example was the office building of the United Nations nearing completion in New York city. Its characteristics, such as reserving part of the lot for walks and parking, thus eliminating the need for interior courts and complicated set-backs and providing better light and air, were shared by other projects both under construction and in the design stage. This was a return toward two of the prototypes of the '30s, the direct verticality of the Philadelphia Saving Fund Society building and the slab form of Rockefeller Center. The U.N. building also showed maturity in the way its end façades were left unpierced, and by distinguishing the utility floors from the office floors by louvres, thus departing from the domination of the traditional grid.

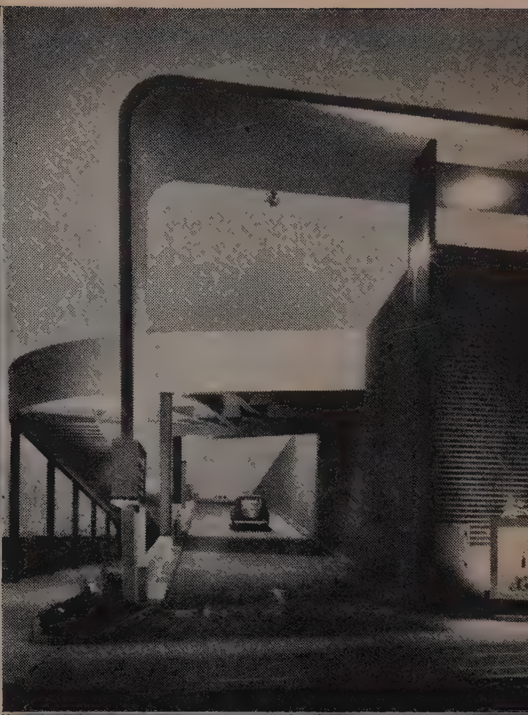
A marked freedom from the conventional idea that a building must be built and then finished with another set of materials, detail, trim, etc., showed itself during the year as a possible trend. Here and there buildings appeared in which the structure and materials were left to express themselves, as in the Lunt-Lake apartments in Chicago and in many houses. The most striking application of this general concept was the Bluebonnet plant in Texas, in which walls and even roofs were omitted in parts if their function permitted. In this development, economy quite clearly played a major role, but there were in it also elements of romantic delight in the resulting forms and textures and of mature assurance on the part of the designers.

The highest distinction conferred by the American Institute of Architects, its gold medal, was awarded to the great U.S. architect Frank Lloyd Wright. At the age of 80, he maintained his role as bête noire of conservatives; he suggested moving the capital of the United States to a more western point, and he continued his output of original creative buildings, houses which could be partly built by the owner's own labour, and a theatre which by its triple stage proposed to make use of the lessons of the cinema. The influence of his ideas and of his buildings seemed to be growing, as the austerity of the '30s and '40s was superseded by a warmer, sometimes excessively mannered mood. The effect of greater relaxation was shown also in a number of laboratories and office buildings erected in rural settings, such as the Air Reduction corporation's laboratory at Murray Hill, N.J., where there were adequate parking facilities as well as room for expansion and the building could be kept low and could ramble freely. This approach was paralleled in building for other purposes such as the completed Aalto dormitory at the Massachusetts Institute of Technology, the Lamont library at Harvard, Paul Nelson's hospital at St. Lô, France, Eliel Saarinen's Des Moines Art centre and Eliel and Eero Saarinen's General Motors Research centre.

(C. L. V. M.)

Great Britain.—Two ambitious building schemes completed in London during 1949 were blocks of flats at Finsbury and Holborn. The former comprised three blocks, two of eight stories containing 48 flats and one of five stories containing 32



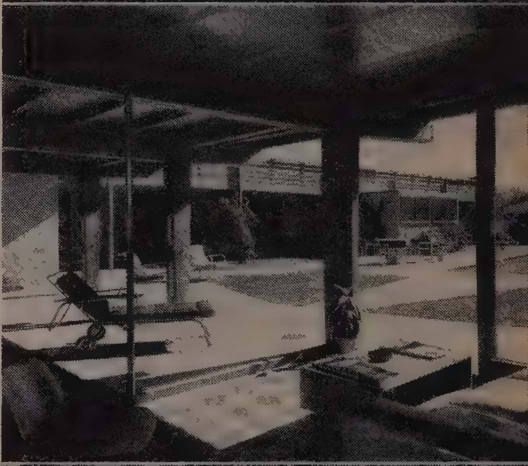


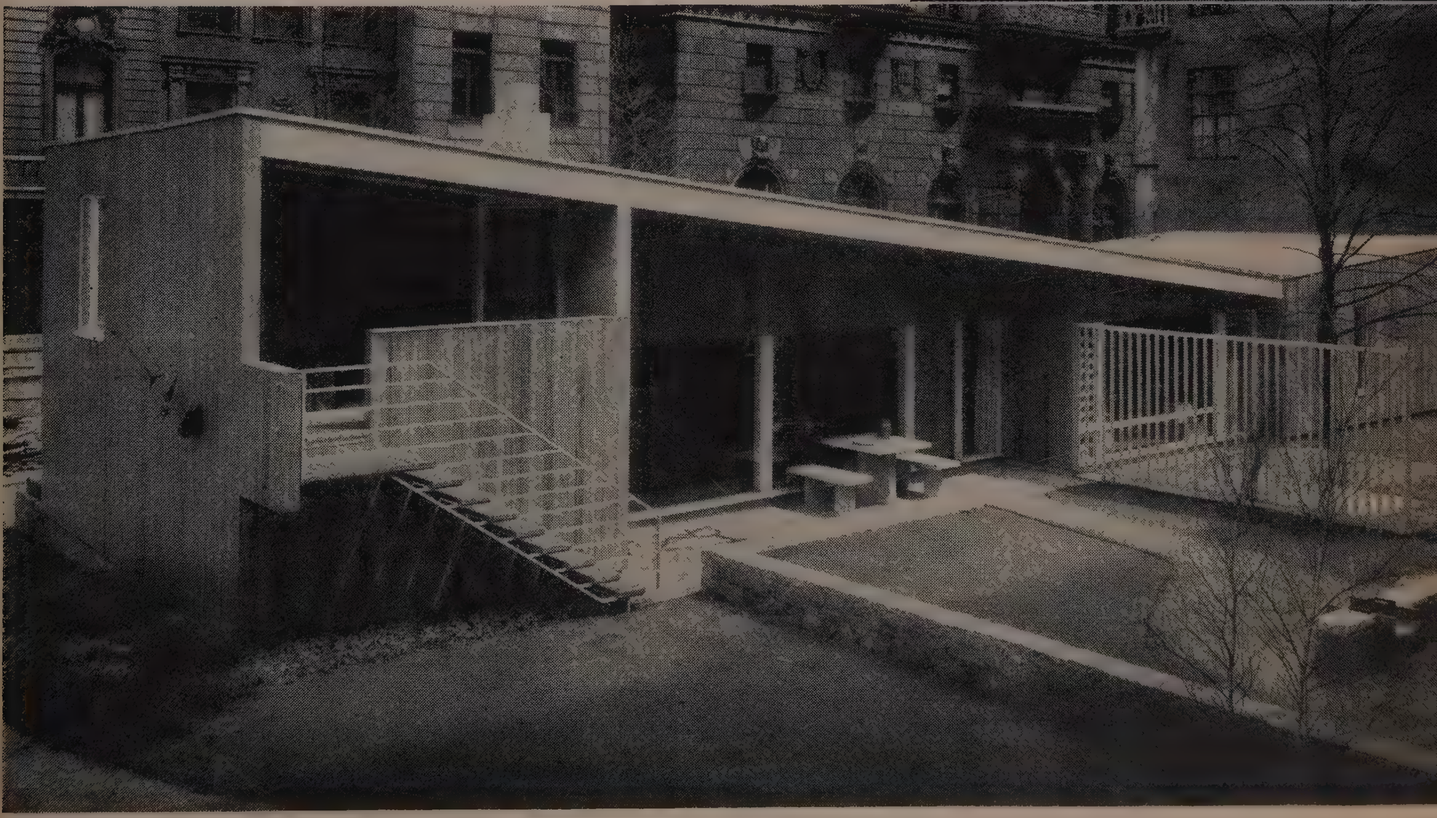
Above: RURAL GRADE SCHOOL at Clarksville, N.Y., built with a north-south exposure on the architect's belief that in that climate the disadvantages of solar heat and glare in spring and fall outweighed its winter advantages. Henry L. Blatner, architect

Above, right: RAMP ENTRANCE to rooftop parking spaces above a department store in Westchester, a suburb of Los Angeles, Calif. With most of the store's shoppers auto borne, the main entrance is from a penthouse at the centre of the roof; there, too, is an indoor-outdoor nursery for "checking" shoppers' children. Gruen and Krummeck, architects; Karl Van Leuven, associate in charge

Right: HOTEL at Palm Springs, Calif., illustrating a postwar trend toward small, luxurious resort structures, with a simple employment of natural materials (redwood and stone in this case). All rooms overlook the swimming pool with its landscaped seating space and shaded areas beneath a balcony. William F. Cody, architect

Below: EXPANSIBLE HOUSE designed by Marcel Breuer specifically for the Museum of Modern Art, New York city, and exhibited there in 1949. Breuer was commissioned to produce "a moderately priced house for a man who works in a large city and commutes to a so-called 'dormitory town' on its outskirts where he lives with his family"





flats. The construction, of reinforced concrete, was based on the box-frame principle of continuous slabs and walls and utilized a new system of hydraulically jacked shuttering, never previously used in England.

The Holborn scheme included five blocks of flats, one of ten stories and the rest of five stories, containing 162 flats in all. Construction was steel frame with hollow tile floors and reinforced concrete flank walls, staircases and cantilevered balconies. Cavity walls were used as panel infillings, the first time this had been permitted for high buildings in London. On the flank walls precast concrete slabs, surfaced with broken brick, were used as permanent shuttering.

Among the most notable schools were those built by the Hertfordshire county council. They were all designed in the county architect's department, under the direction of C. H. Aslin, and employed a standardized system of construction which was intended for use throughout the whole schools' program of the department. It was based on a light steel frame, designed as a series of component parts capable of mass production and easy assembly. Precast concrete blocks and fibrous plaster covered the frame. The use of colour and the design and placing of windows were carefully considered from the point of view of the child.

Great Britain's first permanent prefabricated aluminum school was opened during March. With accommodation for 480 pupils, it was built in approximately nine months.

One of the largest building projects to be completed in England during 1949 was a group of buildings for the Bristol Aeroplane company at Filton near Bristol. These buildings included an aircraft assembly hall, together with a canteen, boiler house, workshops, storage buildings and a two-story block of offices and workshops for British Overseas Airways corporation. The assembly hall consisted of three bays, equal in span (358 ft. between main supports) but with the centre bay 420 ft. deep and the two side bays each 270 ft. deep. The eight acres of floor space were kept free of such things as buried pipes and heating panels, allowing the position of the jigs on which the aircraft were built to be altered in accordance with changes in the production layout.

Commonwealth.—The results of the competition for the new provincial administration headquarters office building at Pietermaritzburg, Natal, were published. The competition was restricted to the architects of Natal, and the competitors were required to limit the total cost of the building, including professional fees, to £250,000.

The Cranbrooke private hotel in Johannesburg was among the most imaginatively conceived buildings completed in South Africa during the year. Accommodation comprised a basement car park and boiler room, ground floor public rooms, kitchen and staff quarters, six bedroom floors with 135 furnished rooms, and native servants' quarters at roof level.

The results of the Anzac House competition were published. The winning design (for Sydney, Australia) was planned in two distinct parts, an auditorium with ancillary rooms and an office building, the two sections being independent with separate entrances. Auditorium accommodation was provided for 787 people.

Europe.—In Sweden an 11-story block of flats was erected outside the town of Örebro. Built of reinforced concrete, the building was finished in bright coloured cement.

In Czechoslovakia two office buildings were completed in Prague. One had a reinforced concrete frame with brick panel infilling, faced with light-brown stone. The other was the first large building in Czechoslovakia to employ the patent Swedish pivoting side-hung double window. (*See* also Building and Construction Industry; Housing; Town and Regional Planning.) (I. R. M. M.)

Archives, National.

Established by congress in 1934 as an independent agency, the national archives was transferred on July 1, 1949, along with the division of the federal register and the Franklin D. Roosevelt library at Hyde Park, N.Y., the other parts of the national archives establishment, to the newly created General Services administration. On Dec. 1, 1949, these parts and a new records management division were formed into the national archives and records service of the General Services administration. Archivist of the United States in 1949 was Wayne C. Grover.

The functions of the national archives, the division of the federal register, and the Franklin D. Roosevelt library were not changed. The new records management division was to make surveys of government records, develop standards and methods for improving records management, and promote such programs throughout the government in order to reduce as rapidly as possible the huge, costly backlog of noncurrent government records by disposing of those of no further value and by transferring permanently valuable documents to the national archives.

By the close of 1949 there were more than 900,000 cu.ft. of permanently valuable, noncurrent records of the federal government in the national archives. More than 365,000 reference services on them were performed for the government and the public during the year.

Work on the 1949 edition of the *Code of Federal Regulations* was a major activity of the division of the federal register. Because so many regulations in effect on June 30, 1943, when a regular five-year codification was due, were temporary, congress authorized a cumulative supplement instead. The 1949 *Code*, more than half of which was off the press by the end of the year, therefore covers a ten-year period.

Of President Roosevelt's papers, 1910–45, which were in the Franklin D. Roosevelt library, 85% were to be opened for research in March 1950. By that time the preliminary examination of them would have been completed by the library staff and reviewed by Grace Tully and Judge Samuel Rosenman, named with Harry Hopkins by Roosevelt to screen his papers.

(W. C. G.)

Areas and Populations of the Countries of the World.

The political entities of the world are listed here with their areas, populations and number of persons per square mile. The latest census or official estimates are given for each country. Areas in square miles, including inland water areas, are in accordance with the boundaries for the year of the population figure unless otherwise noted. Some of the later boundary adjustments had not been recognized at the end of 1949 by the U.S. government. The subtotals for colonial groupings within continents do not carry density figures.

Where two figures are given for a country, the most recent is used in the continental and world totals.

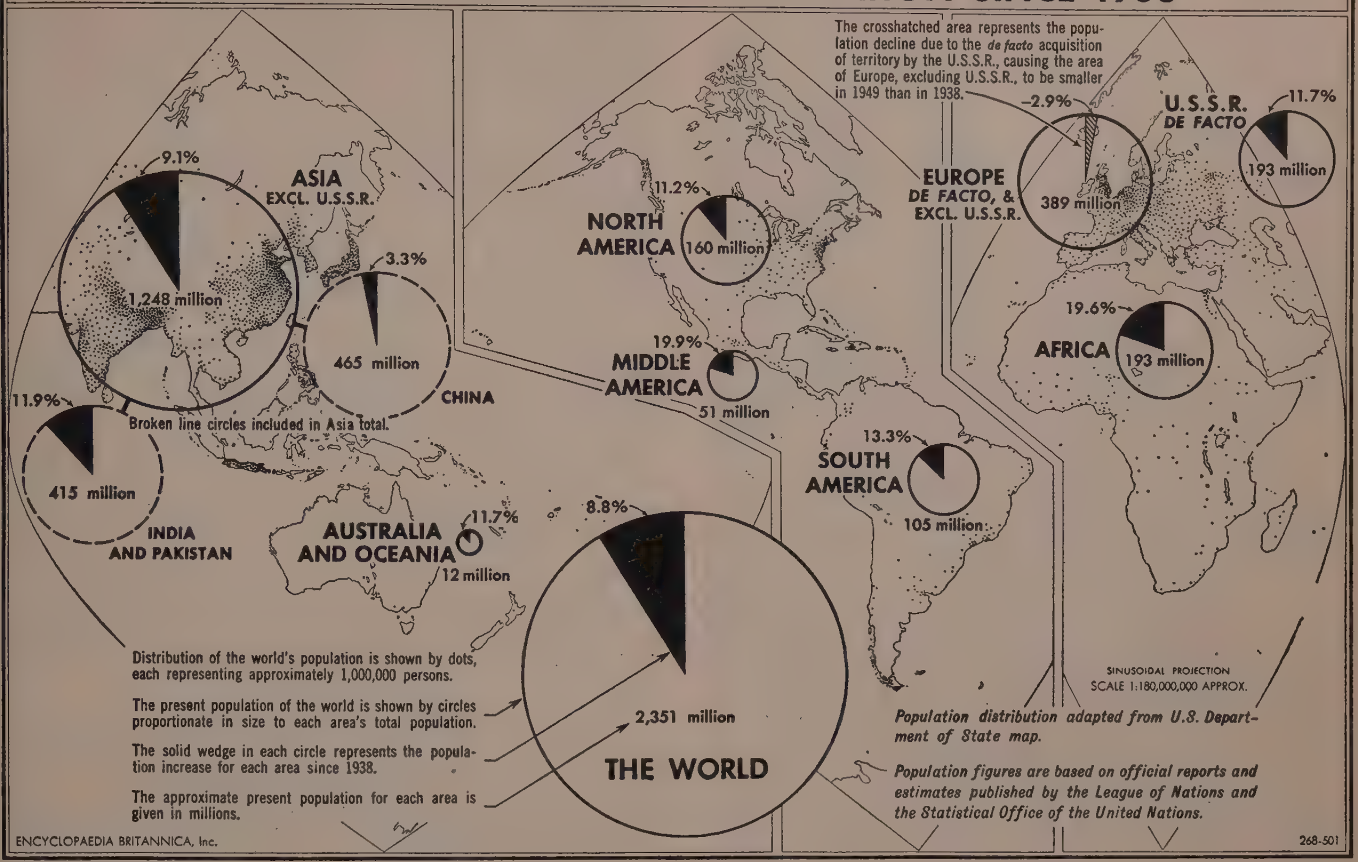
The table, on this and the following two pages, provides a fundamental basis for country comparisons.

Areas and Populations of the Countries of the World

(For statistical details and dates see separate country and empire articles)

Name of continent and state	Area (In sq.mi.)	Population (In thousands)	Persons per sq.mi.
World total	58,087,756	2,341,154	44.9*
AFRICA	11,596,043	187,494	16.2
Belgian colony and trusteeship	925,094	14,748	
†British colonies, dependencies, protectorates and trusteeships	3,916,650	68,647	
Egypt	383,000	19,528	51.0
Ethiopia	350,000	8,000	22.9
French colonies, trusteeships, protectorates, department and metropolitan area	4,258,070	49,301	

INCREASE OF THE WORLD'S POPULATION SINCE 1938



The crosshatched area represents the population decline due to the *de facto* acquisition of territory by the U.S.S.R., causing the area of Europe, excluding U.S.S.R., to be smaller in 1949 than in 1938.

Distribution of the world's population is shown by dots, each representing approximately 1,000,000 persons.

The present population of the world is shown by circles proportionate in size to each area's total population.

The solid wedge in each circle represents the population increase for each area since 1938.

The approximate present population for each area is given in millions.

Population distribution adapted from U.S. Department of State map.

Population figures are based on official reports and estimates published by the League of Nations and the Statistical Office of the United Nations.

ENCYCLOPAEDIA BRITANNICA, Inc.

Areas and Populations of the Countries of the World—Continued

Name of continent and state	Area (In sq.mi.)	Population (In thousands)	Persons per sq.mi.
Liberia	43,000	1,600	37.2
Portuguese colonies	794,959	11,502	
South-West Africa (mandate of Union of South Africa)	317,725	369	1.2
Spanish colonies and protectorate	134,763	1,537	
Tangier, International Zone of	232	150	646.6
Union of South Africa	472,550	12,112	25.6
ANTARCTICA	6,000,000	Uninhabited	
ASIA (exclusive of U.S.S.R.)	10,593,048	1,242,986	117.3
Afghanistan	270,000	12,000	44.4
Arabian desert	193,000	Largely uninhabited	
Bhutan	18,000	300	16.7
British colonies, dependencies, protectorates, protected state and independent state under British protection	248,861	9,993	
Burma	261,749	17,000	64.9
Ceylon, Dominion of	25,332	7,177	283.3
China (35 provinces, including Formosa, Kwantung and South Manchurian railway, Manchuria and Tibet)	3,876,956	463,493	119.6
French overseas territory and associated states	272,552	25,794	
India, Dominion of	1,243,886	342,114	275.0
Iran	634,413	17,000	26.8
Iraq	116,600	4,794	41.1
Japan (1948)	146,690	82,466	562.2
Jordan, Hashemite Kingdom of	34,750	400	11.5
Korea	85,225	29,239	355.6
Kuwait	9,000	120	13.3
Lebanon	3,470	1,208	348.1
Mongolian People's Republic	580,158	850	1.5
Nepal	54,000	6,910	128.0
Netherlands Indies (Indonesia)	735,000	76,360	103.9
Oman and Masqat	65,000	830	12.8
Pakistan, Dominion of	337,524	73,321	203.1
Palestine (including Israel)	10,159	2,000	196.9
Philippines, Republic of the	115,600	19,234	166.4
Portuguese colonies	8,876	1,496	
Qatar	4,000	16	4.0
Saudi Arabia	597,000	6,000	10.1
Siam	198,272	17,666	89.1
Syria	72,560	3,750	51.7
Trucial Sheiks	16,000	105	6.6
Turkey	296,185	19,750	66.7
Yemen	31,000	1,600	51.6
AUSTRALIA and OCEANIA	3,304,620	11,697	3.5
Australia	2,974,581	7,581	2.5
Australian dependency, territory and trusteeships	183,557	1,216	
British colonies, dependencies, condominium, protectorate and protected state	24,670	496	
French colonies	9,199	106	
New Zealand	103,416	1,840	17.8
New Zealand dependencies and trusteeship	1,652	94	

Areas and Populations of the Countries of the World—Continued

Name of continent and state	Area (In sq.mi.)	Population (In thousands)	Persons per sq.mi.
United States possessions, territory and trusteeship	7,545	364	
‡EUROPE (exclusive of U.S.S.R.)	1,908,096	385,390	202.0
Albania	10,629	1,175	110.5
Andorra	174	5	28.7
Austria	32,388	6,953	214.7
Belgium	11,774	8,603	730.7
British colonies and dependencies	124	330	
Bulgaria	42,796	7,100	165.9
Czechoslovakia (1947)	49,330	12,409	251.6
Denmark (excl. Greenland, incl. Faeroe Islands)	17,109	4,220	246.7
Eire	26,602	2,997	112.7
Estonia	18,357	854	46.5
Finland (including Åland Islands)	130,159	3,958	30.4
France	212,737	41,500	195.1
Germany (1937 area, 1939 population)	181,742	69,317	381.4
Germany (1946)	143,245	65,911	460.1
Greece (including Aegean Islands)	51,182	7,960	155.5
Hungary	35,893	9,165	255.3
Iceland	39,768	139	3.5
Italy (1948)	116,235	45,706	384.6
Latvia	25,395	1,650	65.0
Liechtenstein	61	13	213.1
Lithuania	25,173	2,353	93.5
Luxembourg	1,010	292	289.1
Monaco	0.6	21	35,000.0
Netherlands	12,868	9,955	773.6
Norway (including Spitzbergen)	149,486	3,185	21.3
Poland (pre-World War II)	149,922	35,339	235.7
Poland (1946)	120,359	23,900	198.6
Portugal (incl. Azores and Madeira Islands)	35,413	8,402	237.3
Rumania	91,654	15,873	173.2
San Marino	38	12	315.8
Spain (including Canary Islands)	194,945	27,761	142.4
Sweden	173,390	6,925	39.9
Switzerland	15,940	4,609	289.1
Trieste, Free Territory of	293	345	1,177.5
United Kingdom	93,667	50,213	536.1
Vatican City	0.5	1	2,000.0
Yugoslavia (after Sept. 15, 1947)	98,826	15,752	159.4
U.S.S.R. (1939)	8,173,557	170,467	20.9
U.S.S.R. (1949 area, 1948 pop. est.)	8,436,121	193,000	22.9
NORTH AMERICA	9,387,294	214,824	22.9
British colonies and dependencies	21,172	2,690	
Canada	3,847,597	13,636	3.5
Costa Rica	19,238	825	42.9
Cuba	44,217	5,295	119.8
Danish colony (Greenland, including ice cap)	840,000	21	0.03
Dominican Republic	19,129	2,214	115.7
El Salvador	13,176	2,100	159.4
French territory and departments	1,206	601	
Guatemala	45,452	3,717	81.8
Haiti	10,748	3,500	325.6
Honduras	59,160	1,326	22.4

Areas and Populations of the Countries of the World—Continued

Name of continent and state	Area (In sq.mi.)	Population (In thousands)	Persons per sq.mi.
Mexico	767,168	24,447	31.9
Netherlands overseas territory (The Netherlands Antilles)	403	160	397.0
Nicaragua	57,145	1,173	20.5
Panama (excluding Canal Zone)	28,575	764	26.7
United States	3,022,387	150,000	49.6
United States possessions	590,521	2,355	
SOUTH AMERICA	6,862,534	105,763	15.4
Argentina	1,079,965	16,300	15.1
Bolivia	416,040	3,922	9.4
Brazil	3,286,170	48,900	14.8
British colonies and dependencies	97,161	392	
Chile	286,323	5,704	19.9
Colombia	439,714	10,777	24.5
Ecuador	104,510	3,362	32.2
French department (French Guiana)	34,740	35	1.0
Netherlands overseas territory (Surinam)	54,291	210	3.9
Paraguay	157,047	1,270	8.1
Peru	482,258	8,061	16.7
Uruguay	72,172	2,330	32.3
Venezuela	352,143	4,500	12.8

*In computing the world density the area of Antarctica is omitted.
†Includes as military trustee areas Libya, Eritrea and Italian Somaliland.
‡Areas and populations of Baltic republics included in 1948 and 1946 U.S.S.R. totals.

Argentina. A republic in southern South America, Argentina is bounded on the north by Bolivia, Paraguay and Brazil; on the south and west by Chile; and on the east by Uruguay, the Río de la Plata and the Atlantic ocean. Next to Brazil it is the largest country in South America, with an area of 1,079,965 sq.mi. and a population of 16,300,000 (est. mid-1948), mostly of European ancestry. The capital and leading port, Buenos Aires, has a population of 3,000,371 (1947 census). Other principal cities are: Rosario (464,688); Avellaneda (279,572); Córdoba (351,644); La Plata (271,738); Lanús (242,760); Mar del Plata (104,513); Tucumán (152,508); Santa Fé (168,011); Bahía Blanca (93,122); and Mendoza (105,328). Religion: Christian, mainly Roman Catholic. President in 1949: Gen. Juan Domingo Perón.

History.—During 1949 there was a trend in Argentina toward a more authoritarian central government, denial of civil liberties and economic self-sufficiency. This was brought about by approving a new constitution, enacting laws regulating the formation of new political parties and punishing insults against public officials, and negotiating a commercial treaty with Great Britain.

Early in the year, at the Inter-American Economic conference held in Buenos Aires, there was some disagreement with the United States. The expected flow of dollars to be obtained through sales to European countries benefiting from the Marshall plan and the Economic Cooperation administration program failed to materialize. The requirements of the five-year industrialization and development plan launched by Perón in 1946 called for ever-increasing quantities of steel and machinery. A reduction in foreign trade, as a result of high Argentine prices and large crops elsewhere, created additional economic difficulties.

Miguel Miranda, head of the National Economic council and who through the ministry of commerce and industry controlled the Institute for the Promotion of Trade, continued to advocate a nationalistic economic policy of high prices, nationalization of foreign-held assets and self-sufficiency. His theories were mildly opposed by Orlando Maroglio, president of the Central bank, who advocated economic liberalization.

This dispute prompted Perón to remove Maroglio and appoint Alfredo Gómez Morales as minister of finance and head of the Central bank. He also removed Miranda and appointed Roberto A. Arés as minister of national economy. For a few days Miranda's status seemed uncertain and he was reported to continue as financial adviser to the president. But he finally resigned and went to Montevideo, Urug. The reorganization of the National Economic council seemed to indicate a desire to correct mismanagement and inflation. Postage, telephone rates and taxes were increased, especially in Buenos Aires province.

These measures, however, did not bring about prompt relief. A report issued by the Institute of International Finance of New York university, *The Economic Situation in Argentina*, claimed that Argentine inability to use sterling and other nonconvertible currency arising from its trade with Europe to cover its large deficit with the United States was responsible for most of its economic difficulties. The purchase of foreign-owned enterprises, nationalization of internal air lines, railroads, telephones and merchant fleet, the retirement of the dollar debt and conversion to a government-controlled economy were contributory factors to the economic crisis. The report added, however, that Argentine economy was basically sound.

On June 27, Perón signed a commercial treaty with Great Britain. Basically, it was a barter arrangement whereby Argentina would receive machinery and manufactured goods and Great Britain would receive wheat, meat and linseed oil. The treaty constituted an attempt by Perón to overcome the dollar shortage. In the midst of the negotiations, the United States granted $28,000,000 of ECA funds to purchase Mexican and U.S. meat to be sent to Britain. This was regarded by the Peronistas as unfair interference in their internal affairs. The United States, on the other hand, considered the treaty as a denial of multilateral trade principles envisioned by the tariff reciprocity program and the Marshall plan. It was announced, however, that ECA aid to Britain would not be withheld on account of the treaty.

As a further stimulus to foreign trade the peso was devalued late in the year. The budget announced for 1950, the largest in Argentine history, amounted to 11,000,000,000 pesos. About one-fourth of it was appropriated for the armed forces.

The constitutional convention, made up of 109 Peronistas, 48 Radicals and one Labourite, met in Buenos Aires early in the year. The outstanding provisions of the new charter were: (1) it allowed the re-election of the president; (2) it incorporated provisions for rights of workers—whereby they were granted increased wages and seniority rights—and rights of old age; (3) deputies and senators were to be elected together with the president every six years; (4) it incorporated article 40 which granted the government power to nationalize enterprises where mutual sale agreements were not reached; this provision hampered relations with the United States and made foreign capital fearful of investing locally; (5) foreigners could become citizens after residing in Argentina two years; after five years' residence they must become citizens unless they express a desire to the contrary. This article caused apprehension in diplomatic circles, since in its original form it gave foreigners no alternative. As originally drafted, it was considered contrary to the treaty of friendship, commerce and navigation of 1854 with the United States.

The constitution was approved, after the opposition had walked out, charging steam roller tactics by the Peronistas, by a vote of 101 to 0; the Radical opposition decided by a vote of 80 to 18 to pledge their allegiance to it.

In midyear, Foreign Minister Juan A. Bramuglia, who had acquired international renown for his work in the United Nations assembly, was removed. It was reported he differed with Ambassador Jerónimo Remorino over Argentine policy toward the United States. Bramuglia was reported friendly toward international co-operation and was regarded as the outstanding member of the cabinet and possible presidential candidate. Hipólito Jesús Paz, a law professor, succeeded Bramuglia.

In the provincial elections held in April in Santiago del Estero and Catamarca, the Peronista vote was reduced from 79% in the previous election to 62%, but in the elections held in Jujuy in November the Peronistas seemed to have regained their previous advantage.

During November and December, a subcommittee made up of José Emilio Visca and Rodolfo P. Decker, acting in the name of the congressional committee on anti-Argentine activities, took over the account books of Associated Press, United Press, the National City Bank of New York, the Bank of London and seven newspapers including *La Prensa*, *La Nación* and the Catholic *El Pueblo*. The subcommittee claimed it was investigating the funds obtained by Perón's opposition. The latter alleged that Visca and Decker were acting without authority.

The Joint United States-Argentine Commission for Commercial Studies finished its work and was reported optimistic over the possibility of eliminating barriers and improving trade between the two countries. (*See* ANTARCTICA.) (J. MCAD.)

Education.—In 1949 there were 14,649 primary schools, with 2,074,233 pupils and 91,024 teachers. The 744 secondary, normal and special schools had 185,283 students; they included 136 national colleges with 44,901 students, 219 national normal schools with 67,968 students and 91 national commercial schools with 25,973 students. The 670 incorporated (*i.e.*, private) secondary, normal and special schools had 55,693 students. There were national universities at Buenos Aires (34,988 students), La Plata (18,181), Córdoba (8,881), Cuyo (6,749), Tucumán (2,308), the national university of the Litoral at Santa Fé (17,716) and the technical institute at Bahía Blanca (254).

Finance.—The monetary unit is the peso, valued at $0.1109 U.S. currency, free rate, on Nov. 30, 1949. Selling rates for imports on that date were: preferential A $0.2681; preferential B $0.1862; and basic $0.1642, depending upon the importance of the imports to the economy. The 1950 budget, as presented to congress, totalled 11,258,400,000 pesos, distributed as follows: national administration 4,870,000,000 pesos (balanced by general revenues); public works 964,800,000 pesos (to be covered by borrowing); special accounts 400,900,000 pesos (self-balancing); autonomous agencies 5,022,400,000 pesos (self-balancing). In addition, 1,253,200,000 pesos were allocated for the five-year plan. Actual expenditure in 1948 included: national administration 3,740,100,000 pesos; public works 1,702,000,000 pesos; special accounts 288,600,000 pesos; five-year plan 1,253,200,000 pesos; autonomous agencies 2,332,900,000 pesos. The national debt totalled 13,992,100,000 pesos on June 30, 1949 (Dec. 31, 1948: 12,940,000,000 pesos; Dec. 31, 1947: 11,538,600,000 pesos), and was made up as follows: funded 11,802,900,000 pesos (foreign: 61,000,000 pesos, internal 13,418,600,000 pesos, less bonds held by the treasury amounting to 1,676,700,000 pesos); floating 2,189,200,000 pesos. Currency and subsidiary money in circulation on Sept. 30, 1949, totalled 7,374,000,000 pesos. On May 31, 1949, the Central Bank had gold holdings of $142,000,000; foreign-exchange holdings totalled $556,000,000 on Aug. 31, 1949.

Trade and Communications.—Exports in the first six months of 1948, the latest period for which definitive trade data were available in 1949, totalled 3,153,000,000 pesos; imports were 3,030,000,000 pesos. On the basis of a statement made to congress by the minister of finance, it was unofficially estimated that exports in 1948 totalled about 5,458,000,000 pesos and imports about 5,354,000,000 pesos. Exports in 1947 were 5,505,000,000 pesos; imports were 5,349,000,000 pesos. Chief exports were wheat and maize (31%), oilseeds and products (21%), meats (14%), wool (6%) and hides and skins (6%).

The railway system totalled 26,923 mi. in 1949 (including the Argentine section of the new Salta-Antofagasta line), all of which was owned and operated by the government. In 1947 the railroads carried 334,900,000 passengers and 54,169,000 short tons of freight. National highway mileage in 1949 was about 43,500, of which about one-fourth was paved or improved. Total mileage of all roads was more than 300,000. According to *Lloyd's Register of Shipping*, the merchant marine (June 30, 1948) had 330 steamers and motorships (100 tons and over) aggregating 682,606 gross tons and 41 sailing ships and barges aggregating 19,746 tons. Commercial air lines flew 9,708,500 mi. in 1947 and carried 223,500 passengers.

Agriculture.—In the absence of official data, it was estimated that in the crop year 1947–48, 13,634,400 ac. produced 7,345,300 short tons of wheat; 3,386,370 ac., 882,600 tons of oats; 9,304,490 ac., 7,165,000 tons of maize; 4,007,822 ac., 1,039,000 tons of linseed. In the crop year 1948–49, an estimated 13,590,000 ac. produced 5,400,000 tons of wheat and 2,110,000 ac., 440,000 tons of linseed. Exports during the period Jan. 1–Nov. 29, 1949, were estimated in short tons as follows (total for entire year 1948 in parentheses): wheat 1,855,804 (2,402,314); maize 1,050,909 (2,800,139); oats 169,489 (91,069); barley 207,887 (750,778).

The livestock census of July 1, 1947, showed 41,268,470 cattle, 7,237,663 horses, 50,856,556 sheep, 2,981,406 pigs and 4,933,679 goats. Wool exports in the wool year ending Sept. 30, 1949, were 179,370 bales (1947–48: 496,578 bales). Livestock slaughtered in the frigorificos and slaughterhouses in 1947 included 8,773,102 cattle, 12,315,086 sheep and 1,099,726 pigs. Meat exports in 1948 included 3,802,883 frozen beef carcasses, 584,294 frozen mutton carcasses, 3,033,296 frozen lamb carcasses and 121,915 short tons of canned meat. Exports of hides and skins included 2,082,343 calf skins, 610,314 dried ox hides, 4,874,977 salted ox hides and 15,589 short tons of sheep skins. Exports of dairy products included 13,462 short tons of butter and 33,318 tons of casein. Exports of quebracho extract were estimated at 170,627 short tons, of which 28,612 tons were re-exported from Paraguay.

Manufactures.—Industrial establishments numbered 101,884 in 1947 (65,803 in 1943). Most important were the meat-packing establishments, flour mills and textile mills. Representative production data for 1947 included wheat flour 2,133,000 short tons; cotton yarn 72,620 tons; cement 1,500,000 tons; electric energy 3,348,000,000 kw.hr. On the basis of President Perón's 1949 message to congress, it was unofficially estimated that the cost-of-living index stood at 244 in March 1949, and the industrial-wage index at 284 for the year 1948 (1937 = 100).

Mineral Production.—Petroleum production in 1947 was 21,845,925 bbl., slightly more than one-half the domestic consumption. Gold, lead, zinc, copper, tin and coal were also produced. Coal imports in 1948 were 2,119,000 long tons.

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Arizona.

Arizona, nicknamed the "Grand Canyon state," lies in the southwestern part of the United States; the Colorado river forms most of the western boundary. Its area is 113,909 sq.mi. The U.S. census bureau's estimate of the state population as of July 1, 1949, was 745,000. The 1940 census gave rural population, 65.2%; urban, 34.8%; foreign-born whites (including Mexicans) 7.3%; other races, including Negroes and Indians, 14.4%. The capital is Phoenix with an estimated population (1949) of 125,000; other chief cities with estimated 1949 populations are: Tucson, 50,000; Mesa, 15,000; Yuma, 12,000; Prescott, 10,000; Douglas, 10,000; Flagstaff, 9,000; Glendale, 8,000; and Globe, 7,000.

History.—The state's officers (1949) were: chief justice, Arthur T. La Prade; governor, Dan E. Garvey; secretary of state, Wesley Bolin; treasurer, J. W. Kelly; attorney general, Fred O. Wilson; superintendent of public instruction, Marion L. Brooks. The 19th legislature met Jan. 10 and adjourned March 19, having run 9 days without pay beyond the legal limit of 60. The Upper Colorado River Basin compact, formulated the previous October, was approved and accepted; a teachers' tenure bill was passed with some limitations; a county zoning measure was adopted and a zoning commission was created; provision was made for the operation and maintenance of that portion of old Ft. Huachuca allocated by congress to the Arizona national guard; the library extension was authorized to prepare a plan for state-wide public library service; the governor was given power to appoint a state dairy commissioner who was to regulate the industry and especially to secure brucellosis tests for all dairy animals. After long debates and threats of a special session, the Arizona racing commission was created with a time limit for both horse and dog racing. The building appropriations for the state university, state colleges, state hospital, prison and children's colony totalled the largest in the history of the state.

Education.—The net enrolment and the number of teachers in the public schools for 1948–49 stood respectively as follows: elementary schools, 128,643 and 3,582; high schools, 29,500 and 1,195, each number being an increase. There were about 50 private and parochial schools.

Social Insurance and Assistance, Public Welfare and Related Programs.—During the month of Sept. 1949, the number of recipients of social service was 18,489. The state appropriations for 1949 for welfare were: for girl juvenile offenders, $139,525; aid to the blind, $365,000; dependent children, $1,950,000; old-age assistance, $3,430,000; crippled children, $153,100; direct relief, $625,000. Other appropriations: industrial school, $176,833; prison, $441,200; state hospital, $1,084,260; pioneer home, $127,062.

Communications.—Arizona highways in 1949 were as follows: mileage of primary state highways, 3,945; county roads, 15,871; federal aid highways, 2,490; national roads, 7,593. Railroad mileage was 2,154. There were five air bases for interstate travel, besides the municipal air bases of the various towns. There were 143,000 telephones.

Banking and Finance.—National banks, June 30, 1949, had deposits of $299,096,279; loans and discounts, $124,203,656; U.S. government se-

Table I.—*Leading Agricultural Products of Arizona*

Crop	Estimate 1949	1948	Average 1938–47
Barley, bu.	5,440,000	6,400,000	2,058,000
Wheat, bu.	700,000	644,000	628,000
Oats, bu.	330,000	330,000	268,000
Grain sorghums, bu.	3,000,000	3,000,000	1,331,000
Corn, bu.	420,000	408,000	354,000
Alfalfa seed, bu.	208,340	120,000	118,300
Flaxseed, bu.	950,000	1,064,000	369,000
Cotton, bales	460,000	328,000	174,000
Grapefruit, boxes	3,500,000	1,880,000	3,326,000
Oranges, boxes	1,240,000	710,000	838,000
Potatoes, bu.	1,268,000	1,749,000	914,000

curities, $100,601,889. State banks had deposits of $115,309,950; loans and discounts, $31,965,578; U.S. government securities, $56,233,255.

Agriculture.—The lettuce crop in 1948 was 7,128,000 crates, but as a result of the low price in 1949 the Yuma and Salt river valley growers agreed in Dec. 1949 to harvest only from one-third to one-half of their crop.

On Jan. 1, 1949, the livestock population of Arizona included 66,000 horses and colts, 866,000 cattle and calves and 420,000 sheep and lambs.

Manufacturing.—Production of manufactures, exclusive of smelting, for the fiscal year 1948–49 was $134,777,589, an excess of $8,164,944 over the previous fiscal period. As a result of high costs and lowered prices from May to August, production and the number employed decreased during the calendar year 1949.

Table II.—*Mineral Production of Arizona*

Mineral	Production 1948	Value
Copper	750,242,000 lb.	$162,802,514
Gold	109,487 oz.	3,832,045
Silver	4,837,740 oz.	4,378,399
Zinc	108,956,000 lb.	14,491,148
Lead	59,798,000 lb.	10,708,842

Mineral Production.—Miami mines were on a five-day week for a period in 1949, but returned to a six-day week on Nov. 21. Total production and the number employed in the state was decreasing by August.

(H. A. H.)

Arkansas.

Arkansas, a south-central state of the United States, was admitted to the union in 1836. Termed the "Wonder state," its area is 53,102 sq.mi., including about 377 sq.mi. of water. The population was 1,949,387 in 1940, and approximately 1,964,000 (U.S. census est.) on July 1, 1949, a 0.7% increase. The 1940 population was 22.2% urban; the Negro population, principally in southeastern Arkansas, was 482,578. The capital city, Little Rock, had 88,039 inhabitants in 1940, and approximately 100,000 in 1949. Other cities and 1949 population (U.S. census enumeration): Fort Smith, 50,724; Pine Bluff, 34,630; Jonesboro, 14,852; Paragould, 9,413; West Memphis, 7,975. Estimated 1949 population: North Little Rock, 40,000; Hot Springs, 27,500; El Dorado, 19,500; Texarkana (Ark.), 19,000; Blytheville, 15,500; Fayetteville, 13,500; Camden, 11,000.

History.—Legislative enactments in 1949 created a tax commission, a claims commission, a committee to survey higher education and a reformatory for Negro girls; reorganized the legislative council; strengthened election administration; improved the probate code; and authorized establishment of a medical centre. A state-wide referendum approved issuance of $28,000,000 of highway bonds, and voters in many school districts approved higher local property tax rates for expansion of school plants and maintenance. The War Memorial stadium in Little Rock was completed during the year. Disbursement of cash funds without legislative appropriation was sanctioned by the state supreme court. The principal state officers inaugurated in Jan. 1949 were: Sidney McMath, governor; Nathan Gordon, lieutenant governor; Ike Murry, attorney general; C. G. Hall, secretary of state; J. Oscar Humphrey, auditor; J. Vance Clayton, treasurer; Claude Rankin, land commissioner.

Education.—There were 2,554 elementary schools during the year ending June 1, 1949, and 588 secondary schools. Elementary school enrolment was 295,791; secondary 121,639. Teachers and principals in elementary schools numbered 8,224; in secondary 4,972. Expenditures during fiscal 1949 by the state government for educational purposes amounted to $29,674,617. A. B. Bonds, Jr., was commissioner of education.

Social Insurance and Assistance, Public Welfare and Related Programs.—During 1949 old-age assistance grants totalling $15,199,670 were paid to a monthly average of 56,137 recipients. A monthly average of 10,905 families received a total of $5,478,088 for dependent children; an average of 1,773 blind persons received $563,930; an average of approximately 2,600 general relief cases received $387,901. Unemployment benefits totalling $6,229,650 were paid through Nov. 1949 to a weekly average of 12,163 beneficiaries. Arkansas maintained three penitentiaries and four reformatories at a total expense of $1,055,392 during fiscal 1949. There were 1,595 adult and 201 juvenile inmates in penal institutions on Dec. 31, 1949.

Communications.—Expenditures by the state government on highways in fiscal 1949 totalled $16,386,547. The state highway system comprised 9,739.04 mi. at the end of 1949. Rural roads not in the highway system had a mileage of approximately 50,000. Railway mileage was 4,442.01; airway mileage, 832. There were 92 airports at the end of 1949. Approximately 236,000 telephones were in use at that time.

Banking and Finance.—There were 175 state and 51 national banks on Dec. 31, 1949. Deposits in state banks on June 30, 1949, totalled $344,900,734; resources $371,711,871. Deposits in national banks on Nov. 1, 1949, totalled $403,967,000; resources $433,952,000. The 8 state and the 34 federal saving and loan associations in Arkansas had total resources of $54,138,162 on Nov. 1, 1949. State government revenues during the year ending June 30, 1949, were $113,479,034; expenditures $112,437,062. The gross state government debt on Dec. 31, 1949, was $122,415,000; the net debt was $115,253,823.

Agriculture.—The crop reporting service estimated the value of principal crops harvested from 6,040,000 ac. during 1949 at $414,000,000, or 22% below 1948. Cash receipts during 1949 from farm marketings, estimated on the basis of preliminary data for the first ten months of the year, totalled $543,471,000: from crops $380,019,000; from livestock and products $157,452,000; from government payments approximately $6,000,000. Frequent summer rains and severe damage by boll weevils reduced cotton yields.

Table I.—*Leading Agricultural Products of Arkansas*

Crop	1949	1948	Average 1938–47
Corn, bu.	28,368,000	34,052,000	31,979,000
Cotton, bales	1,660,000	1,982,000	1,329,000
Cottonseed, tons	661,000	756,000	553,000
Hay, tons	1,681,000	1,887,000	1,521,000
Rice, bu.	20,502,000	20,490,000	12,309,000
Soybeans, bu.	5,820,000	5,148,000	2,544,000

Manufacturing.—The value of manufactures in 1949 was approximately $600,000,000. Wages in manufacturing during the year, totalling approximately $137,500,000, were paid to a monthly average (January through November) of 69,400 employees. During 1949, according to the Resources and Development commission, 100 new industrial units located in the state and substantial expansions were made by 30 existing industries.

Table II.—*Principal Industries of Arkansas*

Industry	Value added by manufacturing 1947	1939
Chemicals and allied products	$29,194,000	$4,303,000
Food and kindred products	41,020,000	12,414,000
Lumber and products	92,800,000	29,596,000
Paper and allied products	21,887,000	4,443,000
Petroleum and coal products	17,064,000	3,894,000
Primary metal industries	18,885,000	747,000
Stone, clay and glass products	10,237,000	2,736,000

Table III.—*Principal Mineral Products of Arkansas*

Mineral	Value, 1949	Value, 1948
Barite	$2,500,000	$2,681,782
Bauxite	8,000,000	8,573,593
Coal	10,500,000	11,118,160
Natural gas	9,000,000	8,580,000
Petroleum	70,000,000	73,775,528

Minerals.—Minerals produced during 1949, as estimated by the state geologist, had a value of about $120,000,000. Notable progress during the year was made in the technique of secondary recovery of petroleum.

(H. M. A.)

Armies of the World.

The outstanding development during 1949 in the armies of the world was an increased standardization of arms into two basic types: soviet and American.

Regional agreements for military assistance, the groundwork for which was laid in 1948, were formalized to a large degree in 1949. The two most important alliances were the North Atlantic treaty and the soviet bloc.

The year saw the North Atlantic alliance nations commence the formation of integrated programs. Included in the over-all alliance were 12 nations: Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States. At a meeting of the defense committee of the alliance, composed of the defense ministers of the 12 member nations, agreement was reached on the over-all strategy, an armament production program and the co-ordination of planning among the five regional groups. The five regional groups were set up as follows: North America, North Atlantic, northern Europe, western Europe and Mediterranean.

Certain important developments also took place in the soviet bloc of powers. Most important was the defection of Yugoslavia, whose army could no longer be assumed to be part of the soviet alliance. As far as the balance of powers in the U.S.S.R. orbit was concerned—Poland, Czechoslovakia, Hungary, Bulgaria, Rumania and Albania—the outstanding feature of 1949 was an increased sovietization.

Indicative of the extent to which the U.S.S.R. would carry sovietization of the armies of its satellites was the situation in Poland. Marshal Konstantin Rokossovsky, one of the outstanding soviet commanders in World War II, was named head of the Polish armed forces. Rokossovsky joined numerous other soviet officers who had been placed in key positions in the Polish army since the end of World War II. Like Rokossovsky most of these officers were of Polish origin, although thoroughly indoctrinated, trained and tested by the soviets.

The intensive rearmament, particularly of the western powers, which commenced in 1948, continued apace in 1949. However, economy measures in Britain, France and the United States indicated that the extent of the rearmament was to be definitely limited. The passage of the Military Aid program by the United States congress assured the Atlantic pact nations of certain assistance in modernizing their armies.

Another outstanding development of 1949 saw the almost complete destruction of the Chinese armies of Chiang Kai-shek by those of Mao Tse-tung. The exact political alignment of the new army in China, while definitely Communist, was questionable. The general consensus of observers was that while Mao's armies were definitely anti-U.S., as a consequence of U.S. aid to Chiang, they probably could not be counted upon by the soviets.

A new nation, and army, emerged in 1949 with the recognition by the Netherlands of the Republic of Indonesia.

While extensive research and development of new types of equipment continued, most equipment remained that which was in use at the end of World War II. Economy measures restricted re-equipping by the western powers, although it appeared that under the Military Aid program certain new types of equipment, particularly late model tanks, would be made available. (*See* also MUNITIONS OF WAR.)

United States.—The year 1949 may well be marked by historians of the United States army as the peak of its postwar appropriations. With funds for the fiscal year 1950 (July 1, 1949–June 30, 1950) lower than those for the previous year, the army commenced curtailing certain of its activities in 1949. Economy measures taken included closing of numerous army posts and concentrating cadres on fewer major posts, reducing the number of reserve officers on active duty and calling up fewer men in the draft. Previous authorization to expand the army to more than 900,000 men was rescinded, and at the end of 1949 strength was at 670,000.

To the regular army strength should be added the national guard as reserve strength. After a year of intensive training, national guard units were in a far better position to bolster the regular force in the event of emergency. Army units of the national guard reached a strength of approximately 350,000 officers and men. While this could not be considered as entirely effective combat strength, the national guard units had a large number of combat veterans.

Disposition.—Disposition of U.S. units remained approximately the same as in 1948 with the exception that the 11th air-borne division returned from Japan to Camp Campbell, Ky.

Approximate Strength of U.S. Forces in 1949

Far east	127,000	Trieste	5,000
Hawaii	7,000	Caribbean	14,000
Alaska	13,000	United States	411,000
Europe	92,000		

Training.—Exercises were conducted on all scales during the year by both regular and reserve units. Most of the reserve and national guard units conducted some form of divisional exercises during the year. All of the regular army divisions engaged in extensive unit retraining.

Major exercises conducted by the United States army during the year included: Operation "Snowdrop" held in the U.S. zone of Germany in January, involving 16,000 men and designed to test the troops in winter warfare; the Vieques manoeuvres held in the Caribbean in February—a combined operation held with the navy and naval aviation—in which the 2nd marine division and the 65th infantry participated; Exercise "Harvest" conducted in Germany in September involving about 112,000 troops in which the 18th infantry was transported approximately 300 mi. by air.

COMMUNICATIONS HEADQUARTERS for the combined Allied command at Fontainebleau, France, military nerve centre of the western European union

Manoeuvres held at Fort Benning, Ga., stressed the two-bladed attack—infantry-artillery-tank teams advancing in conjunction with air-borne assaults. In these exercises, units of the 11th and 82nd air-borne divisions were preceded into the drop zone by so-called "pathfinder teams" which guided the principal attack formations of transports and gliders to the target by radio beams.

Equipment.—There was continued development of new air-borne equipment. In 1949 a new technique was successfully developed for dropping completely assembled 105-mm. howitzers. The 376th air-borne artillery battalion successfully dropped a battery of four howitzers with ammunition and 150 men during the exercises at Fort Benning.

Great Britain.—The defense budget for the British army was cut by approximately 20% for the year 1949. The ground forces received 44% of a defense outlay of $2,768,000,000, or funds amounting to $1,220,000,000.

British army strength dropped to less than 400,000 men, of which more than 175,000 were overseas. Difficulty was experienced in keeping the army up to strength through voluntary enlistments, and there was considerable discussion in parliament about extending the period of conscription from 12 to 18 months.

Disposition.—At the beginning of the year defense critics pointed out that not a single organized division was in the United Kingdom. British army strength was spread throughout the world during 1949 with two divisions in Germany, one division and three scattered brigades in the middle east and the equivalent of almost two divisions throughout the far east.

Major troop movements in 1949 saw the reinforcement of Hong Kong, bringing the strength of the garrison to approximately 25,000. Troop commitments in Malaya remained heavy.

With the end of hostilities in Greece that particular drain on British manpower was ended, and the 3,000 troops were withdrawn.

Training.—In addition to the defense exercises conducted in Hong Kong and the actual experience of combating insurgents in Malaya, British training was concentrated in the army of the Rhine. Exercises in Germany stressed co-ordination of air, artillery, infantry and tanks, much the same as the current doctrine in the United States army. British officers also set about training an army of 3,000 in Ceylon. When trained the Ceylonese would take over the coastal and anti-aircraft defense duties.

U.S.S.R.—Expenditures for the soviet armed forces totalled 19% of the budget in 1949, compared with 17% in 1948.

The Soviet Union continued to maintain approximately 2,500,000 men on active duty organized into 175 to 200 divisions. In as much as soviet divisional strength is 8,000 men, the U.S.S.R. had 1,600,000 first-line combat troops available for immediate action. Of the active divisions, 50 were armoured units, giving the Red army a powerful striking force.

In addition to the active units the Soviet Union could mobilize sufficient reserves to field another 100 divisions within 60 to 90 days. Ultimate Red army strength could equal 500 combat divisions.

To Red army strength should be added that of the satellite armies consisting of about 40 to 60 divisions. Also, there were indications during the year that the long-heralded east German army was closer to a reality. Latest unverified reports stated that a *Volksarmee* of 60,000 men was to be completely organized by March 1950. The army was to be composed of six motorized divisions equipped with tanks and artillery. The similarity of this force to the 100,000-man army of Germany under the treaty of Versailles was striking. Each man was to be qualified as a weapons instructor, thus immediately identifying the army as a training cadre. The force was ultimately to consist of 360,000 men, with conscription of all men 18 to 30 reportedly scheduled to commence early in 1950.

Disposition.—The principal changes during 1949 in the disposition of the soviet army units occurred as a result of the "cold war" between the U.S.S.R. and Yugoslavia. Three new soviet divisions moved into Rumania and Hungary in August, giving the Red army between seven and nine divisions in these two countries. About half of the soviet forces in these two countries was composed of tank units. In addition there was a combat division in the soviet zone of Austria and another in Bulgaria. While far from sufficient strength to mount an attack, soviet divisional moves kept the Yugoslav army in a constant state of alert.

Training.—Soviet training indicated more and more a reversion to the pomp, ceremony and caste of the tsarist army. The Red army, for example, had three grades of field marshal, adapted a modified version of the "goose step" for parade purposes and encouraged postwar units to identify themselves with famous wartime outfits.

Important soviet training exercises were held in Germany. Among the largest were the autumn manoeuvres at Ohrdruf in which all of the garrisons of the soviet zone—including the German people's police—participated. Spring manoeuvres were held in Brandenburg.

Organization.—Marshal Alexander M. Vasilevsky replaced Nikolai A. Bulganin as minister of the armed forces. For the first time since 1940, before the German invasion, the Red army was under the control of a professional soldier. Next to Georgi K. Zhukov, Marshal Vasilevsky was considered one of the Red army's most gifted strategists.

France.—The budget for the French army (ground forces) amounted to $806,200,000 in 1949. This represented about 28% of the total budget, or about the same proportion as in 1948.

The maximum authorized strength of the army in 1949 was 493,000, although actual strength was closer to 470,000. One of the principal problems of the French army was maintaining the strength of the fighting formations with the short term of service. A bill to broaden conscription was presented to parliament during the year but was not passed.

Disposition.—France was still heavily committed in Indo-China in 1949. The French forces, however, were unable to make substantial progress and were able to hold only the main cities and principal lines of communication. At the end of the year the French forces were patrolling the Indo-China-Chinese frontier to monitor the flow of the defeated troops of Chiang Kai-shek seeking refuge in Indo-China.

Over-all disposition of the French army in 1949 was: 150,000 troops in France; 60,000 in Germany and Austria; 91,000 in North Africa; 69,000 in other colonies; and 100,000 to 120,000 in Indo-China.

Training.—Training of the new French army was still restricted to exercises of divisional size and smaller as a result of overseas commitments. Recruits were called for one year, and most training concentrated on fundamentals. After the completion of 1 year's service, a period of 16 years must be served in the first reserve, followed by 8 years in the second reserve.

Professional army schools, having been reorganized and restaffed to eliminate all traces of the army of 1940, had commenced turning out regular officers and noncommissioned officers of high calibre. The École de Sous Officiers at Strasbourg had an enrolment of 2,500 students, while the Military academy at Coetquidan had an enrolment of 1,200 future officers. Requirements for successful completion of both courses were rigorous, and there was careful screening of all candidates. From Coetquidan—the successor to St. Cyr—officers advanced to specialized training for their particular branch of the service at the Écoles d'Application.

Organization.—Under Defense Minister René Pleven, Gen. Georges Revers was replaced as chief of staff by Maj. Gen. Clement Blanc. Blanc was formerly chief of staff to Gen. Jean de Lattre de Tassigny at Fontainebleau in the high command of the western European union. A specialist in matériel and motor transport, Blanc's appointment was part of the general reorganization of the consolidated military establishment. Another important appointment in the French army was that of General LeCote to command all air-borne troops.

China.—During 1949 the forces of Chiang Kai-shek were virtually destroyed by those of Mao Tse-tung. The year's end saw only limited parts of China still held by forces loyal to Chiang. The principal Nationalist stronghold was Formosa, to which Chiang had succeeded in evacuating about 200,000 combat effectives.

Perhaps the outstanding factor in Mao's victory was not so much the ability of his own forces, but the complete disorganization of Chiang's armies. Defection and disorder contributed heavily to Chiang's defeat.

The so-called People's army was in possession of the bulk of the United States equipment given to China under lend-lease and sold after the war as surplus. To this should be added all of the Japanese arms left in China in 1945 and a certain amount of soviet equipment picked up in Manchuria.

The most important question concerning the Chinese armed forces was whether Mao could hold together the army of more than 2,000,000 men which had been assembled. Organized into a disciplined army, Mao's force could become the most powerful military instrument to emerge in Asia in modern time, with a potential strength exceeding 5,000,000.

Other European Powers.—*Albania.*—Soviet officers were attempting in Albania to develop a force capable, at least, of guerrilla activity. Alarmed by defection of Yugoslavia from the soviet orbit, the Red army appeared to be developing Albania as a shuttle base for a two-pronged attack on Tito, if necessary.

Belgium.—The ministry of national defense announced the creation of a new military base at Kamina in the Congo.

Czechoslovakia.—Although the information could not be confirmed, there was some indication that the progress of sovietization of the Czech army was well advanced. Soviet General Chitinov was reported to be taking over the command of the Czech army.

Denmark.—The Danish defense budget for 1949 was $50,200,000, an increase of approximately 10% over 1948. After considerable discussion between the Danish high command and Britain, the decision was reached to leave the Danish brigade in Germany for another two years. August manoeuvres were held by the Jutland division.

Finland.—Manoeuvres were held near Sappola with approximately 14,500 men participating, the largest held since World War II. Finnish army strength was being maintained by conscription for a nine-month period.

Greece.—The heavy fighting ended in Greece in 1949. The guerrilla forces announced their withdrawal, and survivors of the insurgent army were reported in Bulgaria and Albania. Fewer than 2,500 rebels were believed left in Greece, with no bands larger than 200. Exceedingly heavy casualties had marked the fighting throughout. The Greek army announced its intention of keeping units in the Grammos and Vitsi mountains throughout the winter of 1949–50 to prevent any reinfiltration. Meanwhile steps were taken to return the army to a peacetime footing. At the end of the fighting there were 210,000 men in the army, plus 50,000 gendarmes. Of these 68,000 were to be demobilized, although a new class of 18,000 conscripts would be called up.

Hungary.—There were definite indications that the new Hungarian army—soviet model—was nearing treaty strength of 70,000 men in 1949. Intensive military activity throughout the country characterized 1949. This included, in addition to the rebuilding of the army, the enlargement and expansion of certain key military aerodromes and the building of guided missile sites.

Italy.—The strength of Italian forces was approximately 170,000 in 1949, organized into five divisions with three infantry regiments each and three divisions with two regiments each, one Alpine brigade and one armoured brigade. Plans called for bringing up the over-all strength of the Italian army from 8 to 12 divisions. The Julia Alpine brigade of 5,000 men, organized around one infantry regiment, would be reinforced by two more Alpine brigades of comparable organization. Two new armoured brigades would be formed, modelled on the existing Ariete brigade. Both spring and fall manoeuvres were held in 1949, the former involving the use of armour.

Netherlands.—Out of a military budget of approximately $200,000,000 in 1949, the Netherlands allocated $37,700,000 for its contribution to the western European union. Repatriation of the troops from the Netherlands Indies relieved certain of the problems in meeting western European union commitments. During the early part of 1949 the only troops in the Netherlands were two battalions of combat troops plus about 25,000 men in training. However, by the end of 1949 the bulk of the "Seventh of December" division was repatriated, and the 2nd division and guards units were en route. The bulk of the 85,000 troops in Indonesia were expected to be returned to the Netherlands or demobilized during 1950.

Norway.—Regular army strength totalled 30,000 men in 1949, but a home guard of 95,000 was being trained to support the regular force.

Norwegian units held training manoeuvres in conjunction with Swedish army units.

Poland.—Field Marshal Konstantin Rokossovsky, hero of the soviet army, became minister of national defense of Poland. Together with the issuance of dual citizenship on a large scale to high-ranking soviet officers, so that they could serve in the Polish army, this assured the virtual integration of this force with that of the Red army. A majority of the high-ranking officers were soviet. All equipment, tactical and strategic direction of the Polish army thereafter came from the U.S.S.R. The combat strength of the army in 1949 consisted of 16 divisions, composed of 4 in each military district: Warsaw, Pomerania, Breslau and Cracow. Supporting these infantry units were three artillery brigades, ten tank regiments, plus service troops. In addition nearly another 100,000 men were in the frontier and security corps.

Rumania.—Poorly trained and indifferently equipped with cast-off soviet equipment, the Rumanian army had approximately five effective combat divisions.

Sweden.—Serious differences arose between Sweden and the balance of the Scandinavian bloc over whether to enter the North Atlantic alliance. Sweden decided to continue its traditional policy of neutrality. Maintaining armed forces at a high state of efficiency, Sweden organized a number of armoured brigades during the year.

Yugoslavia.—The budget for defense for the year totalled $560,000,000 or approximately 16% of the national expenditures. This represented an increase of $60,000,000 over the previous year. The Yugoslav army was the strongest force in the Balkans, with 30 infantry divisions and 2 armoured divisions. In addition four security divisions were used as border patrols, although armed only with light weapons. Training in Yugoslavia required two years' compulsory military service. The largest manoeuvres since World War II were held in September, indicating to Moscow that Yugoslavia was not yielding to any mere threat of force.

Commonwealth Powers.—*Australia.*—The regular Australian army was composed of 16,000, with a reserve strength of approximately the same, and a cadet corps of 24,000. There was legislation to increase the regular army by 3,000 and the number of reserves by 26,000. Another bill was introduced to make the Australian regular army a permanent part of defenses. Officers were exchanged with other commonwealth powers, and several were sent to the United Kingdom to study the latest developments in land-air warfare.

Talks on the problems of South Pacific defense were held with British and New Zealand officers.

Canada.—An intensification in the training of reserves was put into effect in 1949. Closer integration of the Canadian and United States armies was achieved with the use of the same communications systems, tactics and command channels. There was continued interchange of officers, and standardization of weapons was effected as far as possible.

India.—The Indian army concentrated its efforts on the development of a sound system of military education and the creation of an adequate body of reserves. Construction was commenced on the National War academy at Khadakvasla, near Poona. On completion in 1953, the Armed Forces academy at Dehra Dun would be transferred to the new location, where officers for all three services, army, navy and air would be trained. The new National War academy, which was modelled on British Sandhurst and the United States Military academy at West Point, would admit 500 cadets every year to take the four-year course. An intensive drive was conducted to recruit about 75,000 students for the national cadet corps. At the end of the year slightly under 60,000 had enrolled. In addition a territorial army of 130,000 was being organized to act as reserve for the regular Indian army. The territorial army was to be similar in all respects to the regular force, except that its units would not be required to serve outside of India in peacetime. About 197 British army officers continued to assist the dominion in the organization of its military forces. An Indian guards brigade was formed, modelled on the similar British unit.

New Zealand.—Conscription was adopted by referendum vote. Training would start at the age of 18, and approximately 2,800 men would be called up each year. In addition territorial forces were being organized, including about 2,000 volunteer and noncommissioned officers.

Pakistan.—With tension continuing between Pakistan and India, no cuts were made in the strength of the Pakistan army. The Quetta Staff college was expanded to handle the additional functions of the army. The last of the 400 British officers in the army were expected to be relieved by early 1950.

Pacific Powers.—*Burma.*—British officers assisted the Burmese in the establishment of their own armed forces. The problem was complicated by a revolt of the Karens and sporadic insurgency throughout the country.

Indonesia.—With the withdrawal of the Netherlands' forces from Indonesia, a major problem in maintaining order remained for the Indonesian Republican army (Tantara Nasional Indonesia). The T.N.I., which was largely Japanese trained and armed, could mobilize 420,000 men, largely disorganized and to a certain degree antagonistic. General Soedirman had the problem of organizing a fighting force out of at least 20 different major fighting units ranging in political belief from the extreme left to the fanatic Moslem right. Nearly all of these forces were well armed with Japanese equipment.

Korea.—There was an outbreak of fighting in 1949 as the North Korean forces probed southward to test the strength of the southern forces. The 65,000 well-equipped and trained men of the South Korean army were apparently too much for the soviet-inspired forces of the north, which broke off action after a short time.

Philippines.—With equipment promised by the United States, the Philippines planned to increase the strength of the constabulary from 12,000 to 20,000, and the army from 17,000 to 25,000. The United States military mission continued to recommend the consolidation of the constabulary units with those of the army. Manoeuvres were held in Tarlac province in February by artillery, air and ground attack teams.

Thailand.—Active steps were taken to organize the equivalent of five full-strength divisions. Strength in 1949 amounted to 40,000 police and 30,000 army troops. Five fully armed battalions guarded the Malaya border. Compulsory service of two years was required, and reserves were called up for three months' intensive training in antiguerrilla tactics. A total of 50 amphibious tanks were obtained from the Philippines.

Middle Eastern Powers.—An uneasy truce prevailed in the middle east. On the one hand, there were continuous but unsuccessful efforts on the part of the Arab league nations to agree on a plan for common defense. Political differences, the principal factor in the Arab defeat of 1948, continued to keep the Arabs weak.

On the other hand, Israel passed a compulsory service law and commenced the establishment of a regular army in which all men were required to serve. Provision was made for service in the reserves.

(*See* also AVIATION, MILITARY.) (E. L. S.)

Arsenic: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Art: *see* ARCHITECTURE; PAINTING; SCULPTURE; etc.

Art Exhibitions.

At the 144th annual exhibition at the Pennsylvania Academy of the Fine Arts, the oldest annual in America, Henry Koerner won the Temple gold medal for "Junk Yard"; Karl Zerbe was awarded the J. Henry Schiedt Memorial prize for "Survivors"; and Philip Evergood the Carol H. Beck medal for "Her World." The National Academy of Design's 1949 annual, next oldest, was in its 123rd year. Top prizes went to Fletcher Martin for his "Cherry Tree" ($1,200 Altman prize), and to Raphael Gleitsmann for "Winter Trees" (Obrig prize). Only one prize winner was a member of the academy.

At the biennial of the Corcoran gallery in Washington, D.C., $5,200 in prizes was distributed. The $2,000 W. A. Clark prize and Corcoran gold medal went to Eric Isenburger for "Romantic Figure"; Fred Conway won the $1,500 second Clark prize for "Witchery"; and B. J. O. Nordfeldt received the $1,000 third prize for "Flood."

In Pittsburgh, Pa., Carnegie institute's "Painting in the United States, 1949" marked their last national exhibition, as in 1950 they planned to return their exhibition to the prewar international scope. Max Beckmann's expressionistic and symbolical "Fisherwomen" won the $1,500 first prize in an otherwise conservative exhibition. Second prize went to Philip Evergood for "High Places" and third prize to Hobson Pittman for "Spring Festival."

The State University of Iowa, Iowa City, devoted its fifth annual summer show entirely to sculpture. Sculpture also had a prominent showing during the summer at the Third Fairmount Park Sculpture International in the rotunda and in the garden court of the Philadelphia museum. The exhibition was to serve as a basis for selection of sculptors to create the remaining historical groups of the Ellen Phillips Samuel memorial in Fairmount park. Foreign artists represented numbered 32, compared with 216 from the United States. Forty-five thousand dollars in commissions was handed out and $30,000 in outright purchases.

Another summer attraction at the Philadelphia museum was the showing of the Henry P. McIlhenny collection, containing some of the finest pictures of the 19th century and contemporary period. Among these were Jacques Louis David's "Pius VII" and "Cardinal Caprara"; Ingres' "Countess of Tournon"; Renoir's "Mlle. Legrande"; Cézanne's "Mme. Cézanne"; and Picasso's "Pitcher and Bowl of Fruit."

The Museum of Modern Art in New York had its usual busy season with a full-scale retrospective one-man show of Georges Braque (in collaboration with the Cleveland museum) covering work from 1904 to 1947. It also held a survey of 20th-century Italian art. Beginning with early experiments in sustained motion by the Futurists, Boccioni and Balla, the exhibition then showed an impressive group of early works by De Chirico, and came down to the present with emphasis on the sculpture of Marini and various abstract painters.

San Francisco's California Palace of the Legion of Honor celebrated its 25th anniversary with 32 paintings and 24 drawings of the French 18th century lent by the Louvre and several French provincial museums.

Best known of the seven Watteaus was "Le Faux Pas," lent by the Louvre, and equally famous was Chardin's "Le Jeune Homme au Violon," also from the Louvre.

The Italian government made two good-will gestures of gratitude for help from the United States in the restoration of Italian monuments. Michelangelo's "David" (from the Bargello in Florence) was lent to the National gallery and Donatello's

"San Lodovico" (1423), which had been cleaned to reveal the full splendour of the original gilt bronze, was sent from the church of Sante Croce in Florence to the Metropolitan museum, Art Institute of Chicago and a few other American museums.

American art of the earlier periods was prominent on the year's exhibition calendar. Washington's Corcoran gallery under the title "De Gustibus" showed 100 years of American taste from Thomas Cole to the present. In the meantime the Wadsworth atheneum in Hartford, Conn., in collaboration with the Whitney Museum of American Art, New York, N.Y., arranged a large exhibition of the work of Thomas Cole (1801–1848).

The Art Institute of Chicago put on a comprehensive showing of American paintings, silver and blown-up architectural photographs under the title "From Colony to Nation" covering the period 1650–1815. This featured not only the best works of Copley, Gilbert Stuart and other notables, but emphasized the little known and the unknown from Maine to Charleston.

Leonardo da Vinci and his contemporaries were shown in an exhibition at the Los Angeles County museum. A feature was the "Madonna of the Pomegranate," thought to be his earliest painting, and nine Da Vinci drawings which were among the best things in the show. Of great interest were the reconstructions of several of Leonardo's forward-looking designs for mechanical contrivances, including a flying machine.

Alexander Girard designed an unusual exhibition for the Detroit Institute of Arts called "An Exhibition for Modern Living." The principles of many contemporary designs were found to have been inherent in many 19th-century functional constructions.

A regional exhibition of unusual interest was staged by the City Art Museum of St. Louis under the title "Mississippi Panorama." This included more than 200 paintings and prints, mostly 19th-century, showing the river trade, the retreating Indians and the oncoming white man and subsequent development of the west. An old-time river panorama, 350 ft. long, by John J. Egan was rolled from one cylinder to another across a stage reconstructed in authentic 1850 style.

For the first time the Louise and Walter Arensberg collection of 20th-century art was permitted to leave their home in Hollywood, Calif., and was featured at the Art Institute of Chicago. More than 200 paintings, water colours and pieces of sculpture made up the group which marks the foundation of the art of this century. Sculpture by Brancusi, early paintings by Braque, Picasso and Marcel Duchamp (including all four versions of the "Nude Descending a Staircase"), and works by Miro, Paul Klee and Dali were notable in the collection.

The Metropolitan museum opened the fall season with a great exhibition of the work of Vincent van Gogh (organized in co-operation with the Art Institute of Chicago). Made up of 97 oils and 67 drawings lent for the most part from two Dutch sources, the Kröller-Müller museum in Otterlo, Neth., and the collection of the artist's nephew and namesake, Vincent van Gogh, the value of the collection was reputed to be $3,000,000.

"Art Treasures from the Vienna Collections" was another great European exhibition which crossed the Atlantic; it opened at the National gallery in Washington, D.C., in November. In the group were 131 paintings as well as tapestries, gold work (Benvenuto Cellini saltcellar), crystal and other precious objects. Among the paintings were 7 Rubens', 12 Titians, 6 Velazquez' and the famous Tintoretto "Susanna and the Elders." (*See* also ART SALES; MUSEUMS; PAINTING.)

FILMS OF 1949.—*Art for Everybody* (National Film Board of Canada); *Circling the Square* (Contemporary Films, Inc.); *What Is Modern Art?* (Princeton Film Center). (F. A. Sw.)

Great Britain and Europe.—Cultural agreements were concluded between a number of nations during 1949 and, as restrictions were dropped, the interchange of exhibitions became progressively easier than at any time after 1939. After a long continental tour a collection of art treasures from Vienna arrived in May at the Tate gallery in London—the same collection which, later in the year, travelled on to the United States. This sumptuous and dazzling display of art treasures was preceded by 121 paintings from the Alte Pinakothek in Munich, which were simultaneously on view at the National gallery. Remarkable concentrations of work by certain masters resulted. Together with those in the National gallery's own collection, there were, for example, more than 50 important Rubens' on view in London.

In the autumn a depleted version of the collection of work by Gerard David and his followers, which had been seen earlier in the year at Bruges, Belg., was shown by the Arts council at

GEORGES BRAQUE, French painter, shown in his Paris studio. A retrospective show of his work was held at the Museum of Modern Art, New York city, in the spring of 1949

Messrs. Wildenstein's gallery. In December the winter exhibition of "Landscape in French Art" was opened at Burlington house; it was composed mainly of oils but included also drawings, engravings and tapestries. The exhibition was chiefly notable for the display of landscapes by Claude Lorrain and Nicolas Poussin, the finest perhaps that had ever been assembled.

At its own headquarters gallery the Arts council showed an exhibition of German graphic art of the last 50 years, which was initiated by the Institute of Contemporary Arts. This gave London its most comprehensive view of German expressionism since before 1939.

The Tate gallery showed an exhibition of work by Richard Wilson (organized the previous year in Birmingham, Eng.) and a memorial exhibition of paintings by James Pryde.

In February Walter Hutchinson opened his so-called National Gallery of British Sports and Pastimes in London at the fine 18th-century mansion that used to be known as Derby house. The collection, which was extensive, was seen to contain many works of curious interest and not a few—more particularly the examples of George Stubbs's work and Constable's "Stratford Mill"—were of real artistic worth.

The *Sunday Pictorial's* second annual show of children's drawings and paintings, at the Royal Institute galleries, was selected in 1949 from nearly 47,000 entries submitted from all parts of the country. The Society for Education in Art held its third "Pictures for Schools" exhibition, at the Whitechapel Art gallery.

The summer show of the Royal academy was remarkable chiefly for the inclusion of a gallery devoted to more modern works in which John Minton's large decorative landscape held a dominating position. The academic idiom was seen at its most incisive in the works of Pietro Annigoni; two of whose portraits later attracted attention at the Royal Society of Portrait Painters. By far the most enterprising of the other exhibiting societies was the Royal Society of British Artists, which gave hospitality to a lively show by London art students, to recent work by Giorgio de Chirico and, in the winter, to the most exciting collection of contemporary sculpture since Battersea park in 1948.

In Glasgow, Scot., a selection from the rich Burrell collection, which was presented to the city in 1944, was seen publicly for the first time.

From the many displays in Europe arranged during 1949, mention may be made of the 200 paintings of "Rembrandt and His Time," at Schaffhausen, Switz.; of the opening to the public of the Thyssen collection at Lugano, Switz.; of the belated centenary exhibition of Paul Gauguin in Paris; and the assembly in Venice of more than 100 paintings and drawings by Giovanni Bellini from all over western Europe and America.

(M. H. Mn.)

Arthritis.

During 1949 all advances in rheumatic diseases were overshadowed by the contribution of P. S. Hench, E. C. Kendall, C. H. Slocumb and H. F. Polley wherein the effects on rheumatoid arthritis of Kendall's Compound E (later renamed "Cortisone") were demonstrated.

While investigating the mechanism whereby remissions of rheumatoid arthritis occur during pregnancy and certain diseases complicated by jaundice, Hench and his co-workers conceived that the factor responsible for benefit in arthritis might be a hormone liberated by one of the endocrine glands other than the sex glands. Trials of various hormones available prior to 1948 had failed. Kendall had isolated various fractions of the secretion of the adrenal cortex, one of which was called Compound E. The quantity of isolated material was inadequate to allow studies of the effect of this adrenal cortical fraction on arthritis. For many years, Kendall and his associates and biochemists in other laboratories had been collaborating to synthesize this compound. Finally in 1948 enough of this material was produced (starting from one of the acids in ox bile) to permit study of its effects in patients. Through the winter of 1948–49 at the Mayo clinic the effects of Compound E were carefully observed in several patients with rheumatoid arthritis. In all patients remarkable improvement of the arthritis occurred. Stiffness quickly lessened, movement of the joints increased, pain, swelling and tenderness of the inflamed joints reduced or disappeared in a period of only a few weeks, and there was a gratifying increase in general health. Report of these investigations was made in the spring of 1949. Through the remainder of the year Compound E was made available to other investigators, all of whom confirmed the reports of Hench and his collaborators.

Cortisone was given by injection daily to accomplish remission or near-remission of the disease. When it was discontinued after a short period of administration the arthritis usually re-

MAYO CLINIC GROUP of (left to right) Drs. C. H. Slocumb, E. C. Kendall, P. S. Hench and H. F. Polley, who carried out the research and medical application of Cortisone, a hormone from the cortex of the adrenal gland, which appears to exert a notable effect on patients with rheumatoid arthritis and perhaps certain other related diseases, as demonstrated at Rochester, Minn., in 1949 lapsed, although some patients maintained a portion of the improvement. In some persons receiving the drug for longer periods, various undesirable side effects were noted—all of which disappeared after administration of the hormone was discontinued.

A fraction of the hormone complex produced by the pituitary gland stimulated the adrenal glands to liberate an increased amount of cortical hormones including Cortisone. This pituitary secretion, known as adrenocorticotropic hormone (ACTH) was isolated in a potent and purified form suitable for injection into humans, and when administered to patients with rheumatoid arthritis effects were observed similar to those resulting from Cortisone.

The effects of Cortisone and ACTH were studied in other rheumatic disorders and connective tissue diseases. Benefit was observed in rheumatic fever, gout, diffuse lupus erythematosus, neurodermatomyositis and other collagen diseases.

The extreme difficulty of isolation of ACTH and the tedious and difficult task of synthesis of Cortisone together with the limited supply of ox-bile acid permitted production in only small quantities; consequently both these substances were important in 1949 chiefly as research tools in the study of rheumatic diseases. The whole problem of connective tissue and rheumatic diseases took on a new light. Mysteries surrounding rheumatism might now be clarified so that the management of these devastating ills could be improved. Much research lay ahead: studies to improve methods of manufacture so that larger supplies could be produced at lower cost; definition of the scope and limitations of effects of the hormones in different diseases; methods of administration to produce greatest benefit and the least or no undesired effects; elucidation of the mechanism of effect of these hormones—which in time should reveal the nature and possibly the cause of the diseases; study of the effects of steroids chemically similar to Cortisone; and the influence of all effective steroids on the entire endocrine glandular system and metabolic functions.

(*See* also CHEMISTRY.)

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Artificial Weather: *see* METEOROLOGY.
Artillery: *see* MUNITIONS OF WAR.

Art Sales.

Kende galleries announced a 1948–49 season totalling more than $1,000,000, their largest single sale having been to the Cortlandt F. Bishop library which brought $325,900. An *Aesop* in maioli binding went for $24,000; a Paris Tasso (1771) with 68 original Gravelot drawings went for $23,500; and a Molière (1734) for $20,250.

In the Oscar Bondy sale Dosso Dossi's "The Combat between Roland and Rodomonte" went at $12,000 and Giovanni di Paolo's "Adoration of the Magi" for $11,000.

The Plaza galleries announced a season's business of $1,322,656.95 with no spectacular individual sales but steady values being maintained in high quality merchandise.

Parke-Bernet galleries of New York city, the leading art auction house of the country, reported that their season amounted to $5,618,628.50, which was a $400,000 increase over the previous year. The highest price paid for a single item was $54,000 for Lincoln's "Gettysburg Address" and the largest individual sale was comprised mostly of early Christian and Byzantine art from the estate of Joseph Brummer and totalled $739,510. The top item in this sale was a pair of Burgundian Gothic tapestries at $42,000. A Saxon 12th-century champlevé plaque brought $11,000.

Leading prices at sales of paintings were $25,000 for Degas's "L'Ecole de Ballet"; $12,000 for Winslow Homer's water colour "The Voice from the Cliffs"; $10,500 for Renoir's "Young Bather"; $7,000 for Frederic Remington's "Among the Led Horses"; and $6,500 for Grant Wood's "Birthplace of Herbert Hoover."

The sale of the Joseph H. Seaman prints brought $90,067. Of these, Rembrandt's "Christ Healing the Sick" went for $7,500, "The Young Haaring" for $3,200, "Ephraim Bonus" for $3,000, and "Clement de Jonghe" for $2,600.

Many books came up at auction including a first edition of Dante's *Divine Comedy* at $9,000 and a Caxton edition (1478) of Chaucer's *Canterbury Tales* at $4,000.

In London the sensational auction of the year was the collection of Sir Bernard Eckstein. The collection was offered at Sotheby's in several lots at different times throughout the season and brought a total of £220,000. Among the paintings was Constable's "Hampstead Heath" which was bought by the Fitzwilliam museum, Cambridge, for £13,000. Other lots included a group of oriental manuscripts and miniatures at £6,287; gold, enamels and jewellery at £14,988; antique silver at £7,554, with the top item of this group being a silver-gilt covered salt (1606) at £4,400. The Eckstein English porcelains brought £18,482 and the continental ceramics £16,552.

Sotheby sold the H. A. C. Gregory collection of Constable paintings and drawings at £28,467, top item of which was an oil, the "Marine Parade," at £13,500. This was shown in the "Masterpieces of English Painting" exhibition at the Art Institute of Chicago in 1946.

Christie's held several important sales during the season including 139 lots of antique gold and silver sold for the earl of Strathmore (Queen Elizabeth's brother) at a total of £15,704. The rarest item was a Charles II gold porringer (1675) which sold for £4,200. Christie's auctioned the collection of Mrs. Arthur James in which a notable Guardi, "Entrance into the Grand Canal," went for £10,290.

On July 22 Christie sold the famous William Blake collection from the estate of W. Graham Robertson for £61,599. "The Ascension" brought £7,350 and "The Lord Confessing His Presumption," £7,770. Many of the best items were acquired by leading British museums through the generosity of the Robertson estate. (F. A. Sw.)

Aruba: *see* NETHERLANDS ANTILLES.
Asbestos: *see* MINERAL AND METAL PRODUCTION AND PRICES.
ASCAP (American Society of Composers, Authors and Publishers): *see* SOCIETIES AND ASSOCIATIONS.
Ascension: *see* ST. HELENA.
Asia: *see* AFGHANISTAN; CHINA; etc.
Association for the Advancement of Science, American: *see* SOCIETIES AND ASSOCIATIONS.
Association of Research Libraries: *see* SOCIETIES AND ASSOCIATIONS: *Research Libraries, The Association of.*

Astronomy.

Announcement was made in June 1949 of the beginning of the most ambitious sky-mapping plan in history. The project—a joint undertaking of the California Institute of Technology, Pasadena, Calif., and the National Geographic society—was being carried out with the 48-in. Schmidt telescope lately installed on Mount Palomar. The great advantage of the Schmidt-type telescope for a program of this kind was the fact that it was a camera of the wide-angle

PHOTOGRAPH OF THE NORTH AMERICAN NEBULA, the first of about 2,000 pictures of the heavens being taken with the wide-angle Schmidt phototelescope at Mount Palomar for a projected *National Geographic Society-Palomar Observatory Sky Atlas.* Work was begun on July 19, 1949, and was scheduled for completion in 1953. The nebula in this first plate is in the northern part of the Milky Way in the constellation of Cygnus (the Swan)

type; that is, a considerable part of the sky could be photographed in a single exposure. It was estimated that about four years would be needed to complete the survey; if the great 200-in. reflector were to be used, around 5,000 yr. would be needed for the same program; the 200-in. reflector would photograph fainter stars than the 48-in. Schmidt, but the field of the latter was far greater. The completed sky atlas would consist of around 2,000 reproductions of the original photographs. Duplicate exposures of each field were being made, one of which recorded the stars in blue light and the other in red light. About three-fourths of the whole sky could be mapped from the location of the Palomar observatory in southern California.

Solar System.—A remarkable new asteroid was discovered by W. Baade on a plate taken with the 48-in. Schmidt telescope on Mount Palomar on June 26, 1949. The orbit, as computed by S. B. Nicholson and R. S. Richardson, showed that the mean distance from the sun is less than that of any other asteroid or comet. At its closest, the asteroid passes inside the orbit of Mercury to a distance of around 21,000,000 mi. from the sun; its greatest distance from the sun is around 177,000,000 mi.—outside the orbit of Mars. Its period of revolution around the sun is only about a month longer than that of the earth. In spite of its nearness, it is a very faint object; its actual diameter is probably about a mile.

A second satellite of the planet Neptune was discovered by G. P. Kuiper at the McDonald observatory, Mount Locke, Tex., on two photographs obtained with the 82-in. reflector on May 1. It was an excessively faint object of between the 19th and 20th magnitude and revolved around Neptune in a period of the order of two years. The name Nereid was bestowed upon the satellite by its discoverer.

No conspicuous comets were under observation in 1949.

The Stars and Nebulae.—A major astronomical discovery was reported during the year by W. A. Hiltner of the University of Chicago, Chicago, Ill., and John S. Hall of Amherst College, Amherst, Mass., and the U.S. Naval observatory, Washington, D.C. Their work—first carried out together and later separately—showed that the light from certain distant stars is polarized by material in interstellar space. All of the implications of this discovery were not clear by the end of the year, but it was considered certain to exercise a profound influence over both theoretical and observational research.

Very rapid fluctuations in the brightness of certain stars were observed. In the case of the eclipsing binary UX Ursae Majoris, A. P. Linnell of Harvard university, Cambridge, Mass., found variations in light of the order of 10% in a rough period of around 4 min. Of great astrophysical interest was the recording of sudden outbursts of light in several of the most numerous of stars in space: the small, red M-dwarfs. Earlier observations by A. van Maanen at Mount Wilson, Pasadena, Calif., had shown sudden brightening in the light of two red dwarfs. W. J. Luyten of the University of Minnesota, Minneapolis, Minn., reported in 1949 the outburst of a red dwarf discovered by him; in the course of about 20 min. the light of the star increased by a factor of around 10 and decreased again to nearly its original brightness. A total of three outbursts of Luyten's star were recorded, two by the discoverer and one by A. H. Joy and M. L. Humason of Mount Wilson. The last-named outburst was of especial interest, since the spectrum of the star was being obtained when it occurred. The spectrum showed remarkable changes from normal; in some respects it resembled that of a very hot star instead of the relatively cool star observed at normal light.

Phenomena for 1950.—*Eclipses.*—A total eclipse of the sun would occur on Sept. 12, 1950; the path of totality would begin near the north pole, pass over the northeastern tip of Siberia and end over the Pacific ocean, north of the Hawaiian Islands. There would be two total eclipses of the moon; the first on April 2, 1950. It would be visible generally in Europe, most of Asia, Africa and part of Australia. The ending of the eclipse would be visible also in central and eastern South America. The second lunar eclipse would occur on Sept. 26, 1950; it would be visible generally in North America and South America and in parts of Europe, Africa and southwestern Asia.

Planets.—The planets Mars and Saturn would be in opposition in March 1950 and would be conspicuous objects in the evening sky throughout the spring months.

(W. W. M.)

Athletics: *see* TRACK AND FIELD SPORTS; etc.
Atlantic Treaty: *see* EUROPEAN UNION; NORTH ATLANTIC TREATY.
Atomic Clock: *see* ELECTRONICS.

Atomic Energy.

A new chapter in the history of atomic energy began on Sept. 23, 1949, when Pres. Harry S. Truman announced, "We have evidence that within recent weeks an atomic explosion occurred in the U.S.S.R." The announcement meant that the monopoly of atomic weapons by the United States had ended. The world was entering a period in which more than one major power possessed an atomic bomb.

U.S. policy, Truman added, had always taken such an eventuality into account. This was emphasized later the same day by both Secy. of State Dean G. Acheson and Gen. Omar N. Bradley, chairman of the joint chiefs of staff.

On Sept. 25, Tass, the soviet official news agency, stated in an English language broadcast that the U.S.S.R. had possessed an atomic bomb since 1947.

Other events of importance in the realm of atomic energy during 1949 included the continued but unsuccessful attempts to reach an agreement on the international control of atomic energy; the three-power negotiations of the United States, Great Britain and Canada to formulate a joint policy on atomic weapons; the substantial achievements of the U.S. Atomic Energy commission including the development of new techniques, the construction of new facilities, the production of improved bombs, the design of a "breeder" type of reactor and the expansion of physical and biological research; the congressional investigation of charges against the commission; and the resignation of the commission's chairman, David E. Lilienthal (*q.v.*).

The Ninth Explosion.—The explosion of the first soviet atomic bomb, believed to have occurred about Sept. 1, 1949, was the ninth nuclear explosion in the history of the world. The United States had set off the other eight: the first, in a test at Alamogordo Air Base in New Mexico on July 16, 1945; the second, over Hiroshima on Aug. 6, 1945; the third, over Nagasaki on Aug. 9, 1945; the fourth and fifth, in tests at Bikini Atoll on July 1 and 25, 1946; and the next three, in tests at Eniwetok Atoll in April and May 1948.

Detecting the Explosion.—An immediate question raised by President Truman's announcement was how the United States government knew that an atomic explosion had occurred in the Soviet Union. In all probability some information had come from undercover sources of the central intelligence agency.

There are, however, three scientific methods of detecting an atomic explosion. The ground vibrations are revealed by seismographs. The air vibrations can be recorded by the microbarograph, an ultra-sensitive barometer which detects minute and sudden changes in atmospheric pressure. The radioactive cloud, which drifts with the wind, can be detected by Geiger counters and similar instruments.

When the first Bikini bomb was set off, evidences of the radioactive cloud were recorded 10 days later by Geiger counters on the Pacific coast of the United States.

The Soviet Program.—It was impossible, of course, to say what point the U.S.S.R. had reached in its atomic program. U.S. observers were inclined to discount the claim that the Soviet Union had had the bomb since 1947. It was known, however, that the Soviet Union had been operating the Czech, Austrian and Saxon pitchblende mines at a feverish rate. The U.S.S.R. was reported to possess uranium deposits in the Tashkent area in the central Asia sector of the Soviet Union; in the Ossetia area, north of Tiflis; in Svanetia in northwestern Georgia; in the region between Samarkand and the Ferghan mountains; in the Alai mountains in Turkestan; and in the Kara-Mazar mountains, north of Khodzhent.

Reports circulating in western Europe stated that the Soviet Union had created a large underground factory for processing uranium on the Sanga river, a few miles north of Erivan, capital of the Armenian S.S.R.

Information received by the U.S. state department indicated that the Soviet Union had deported more than 17,000 Greeks and other non-Russians from the Caucasus area since June 1949. It was believed that the soviet bomb explosion occurred in this area.

U.S. v. U.S.S.R.—In 1947 the president's air policy commission fixed the end of 1952 as A-day, the time after which other nations would possess atomic bombs in quantity. Although by the close of 1949 the U.S. monopoly on atomic bombs no longer existed, it was felt that A-day might yet be a year or two away. There seemed no reason to suppose that the Soviet Union had as yet accumulated as many as ten atomic bombs.

The U.S. stockpile was believed to be in excess of 100 bombs although the true figure was one of the nation's most carefully guarded secrets.

An immediate effect of the soviet atomic explosion was to accelerate the U.S. program. On Oct. 18 President Truman authorized the U.S. Atomic Energy commission to draw on its budgetary reserve for funds to begin a major expansion of its production program. Soon after, congress rushed through legislation to relax the curb it had placed on the commission's spending powers in July. Under the new legislation, the commission could start construction of unbudgeted facilities if it satisfied the director of the budget that they were necessary for national defense.

New Eniwetok Tests.—On Nov. 29, 1949, the U.S. Atomic Energy commission announced that a new series of tests of atomic weapons would be held at Eniwetok Atoll in the Marshall Islands in 1950. The assumption was that a new and yet more powerful bomb was ready for testing. The field operations were to be carried out by joint task force 3, representing the army, navy, air force and Atomic Energy commission.

The Ultimate Weapon.—Scientists believed that the ultimate weapon would be a rocket powered by atomic energy, capable of crossing an ocean or the arctic regions and carrying an atomic bomb in its nose. However, they believed that before that day arrived, there would be rockets of the familiar V-2 type capable of delivering atomic bombs.

Defense Against Bombs.—The soviet bomb explosion stimulated the discussion of defense measures in the United States. On Nov. 17, 1949, the U.S. Atomic Energy commission made public a report entitled "City of Washington and an Atomic Bomb Attack." This report stated that a bomb bursting in the air could be expected to destroy all residences in an area of six to eight square miles and that none of the public buildings in Washington would offer adequate protection to their personnel.

The report stated that there were "three obvious targets" in the Washington area: (1) the Pentagon, (2) the capitol and adjoining area and (3) the area including the White House and the public buildings on or near Constitution Ave. In the opinion of the commission, the most adequate solution of the problem would be dispersal of key buildings, thus reducing their attractiveness as targets. The construction of bomb-proof shelters was not recommended as a practical solution because, while it might save the lives of the persons who took shelter, it would not guarantee the resumption of vital functions. The report also urged the dispersal of hospitals, fire stations and other essential emergency services.

The Effects of Atomic Bombs.—A section of the sixth semiannual report of the U.S. Atomic Energy commission summarized the available data on the effects of atomic bombs on people and areas. At Hiroshima and Nagasaki, 50% to 60% of the casualties were due to blast effects and flame burns, 20% to 30% to flash burns and 15% to 20% to radioactivity. "However," the report states, "had there been protection from blast and fire, nearly as many people would have died from radiation effects alone."

At Hiroshima, the average limit of general structural damage was roughly two miles from "ground zero," the point directly under the bomb explosion. The limit of fire damage was approximately the same.

The Atomic Bomb Casualty commission of the National Research council was carrying on an intensive study in Japan to determine what delayed effects, if any, would result from the bombing of Hiroshima and Nagasaki. By the close of 1949, no evidence had been found of an increase in any disease including cancer. However, in Sept. 1949 a 19-year-old girl who had been injured at Hiroshima was found to be developing radiation cataracts. About a dozen such cases were subsequently found.

No serious amount of residual radioactivity was found on the ground at Hiroshima or Nagasaki. However, at Alamogordo, N.M., where the bomb exploded close to the ground and created a crater, the crater was still dangerously radioactive, but the danger was confined to an area of only 100 ac.

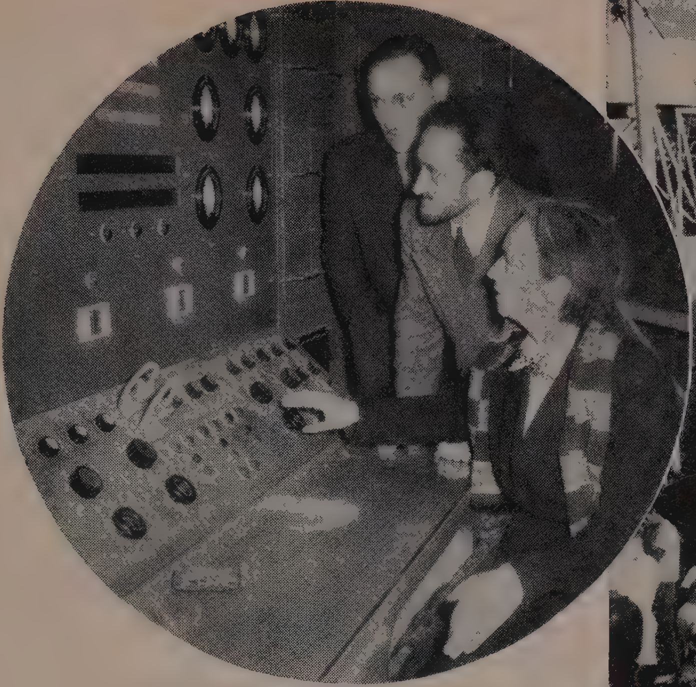
The underwater bomb explosion at Bikini showed that such an explosion disseminates dangerous materials over an extensive area, depending on wind direction and velocity. The lethal area may extend half a mile upwind and two or more miles downwind. The target ships were coated with an invisible radioactive film that defied all attempts at decontamination. Subsequently about 25 of them were either scuttled or sunk by gunfire in naval manoeuvres.

International Control.—All attempts during 1949 to resolve the fundamental differences of opinion between the majority of nations in the United Nations and the soviet bloc on the international control of atomic energy failed.

On Nov. 4, 1948, the United Nations general assembly, meeting in Paris, France, had adopted by a vote of 40 to 6 a fourfold resolution which (1) approved the plan of international control outlined in the three reports of the United Nations Atomic Energy commission, (2) expressed deep concern over the impasse in the commission, (3) requested the representatives of the Big Five and Canada to initiate private conversations in an effort to end the impasse and (4) called on the commission to resume its deliberations.

The majority plan was based on the premise that a mere agreement outlawing the atomic bomb would be insufficient. The plan would create an international control agency which would have ownership or managerial control of the production of uranium, the manufacture of fissionable materials and all atomic activities potentially dangerous to world security. It would have the power to license, control and inspect all other atomic activities. The agency would be empowered to create an international inspection service, make aerial surveys, require accountings, maintain guards and otherwise take precautions to prevent clandestine operations. It specified that the veto power vested in the Security council of the United Nations would not apply to the control agency.

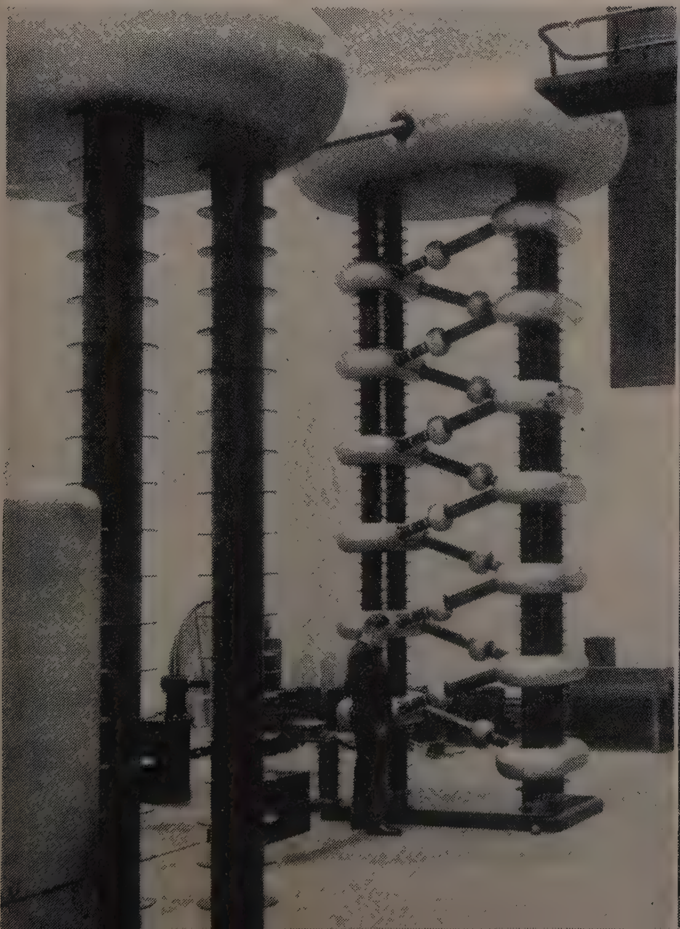
The Commission Fails.—Pursuant to the directive of the general assembly, the United Nations Atomic Energy commission resumed its meetings near the end of Jan. 1949. It became



Above: **MME. IRÈNE JOLIOT-CURIE** with Maurice Surdin (left), electronics chief, and Jean Perrin, French commissioner of atomic energy, at the control panel of the French atomic pile in Chatillon, suburb of Paris

Above: **PHOTOGRAPH** taken at the 1948 atomic bomb tests at Eniwetok, first released by the U.S. Atomic Energy commission in Aug. 1949. U.S. naval crew and vessel are shown in reflected light at the instant of detonation, at an undisclosed distance from the test bomb

Below: **MILLION-VOLT GENERATOR** used for nuclear research at the Clarendon laboratory, Oxford, in 1949, under the sponsorship of the British department of scientific and industrial research



Below: **INDUSTRIAL APPLICATION** of the radioactive isotope cobalt 60 at a Ford Motor Co. laboratory in 1949. Engineers are shown measuring the intensity of gamma rays from the isotope (located on opposite side of this jobbing foundry cupola) by means of a Geiger counter. Results were to aid in designing a permanent installation to determine liquid metal heights in production foundry cupolas

apparent almost immediately that the soviet delegation had no intention of receding from the position it had taken during the previous three years.

On July 29 the commission voted to suspend its work indefinitely. The vote, following the characteristic pattern of the previous three years, was 9 to 2 with the Soviet Union and the Ukraine casting the negative votes.

Six-Power Conversations.—Following the adjournment of the United Nations Atomic Energy commission, the Big Five and Canada initiated the private conversations requested by the general assembly. These six powers, the U.S., U.S.S.R., United Kingdom, France, China and Canada, were the permanent members of the Atomic Energy commission and were known as "the sponsoring powers." The first meeting was held behind closed doors at Lake Success, N.Y., on Aug. 9, 1949.

On Oct. 26, after 11 secret meetings, the six powers made an interim report to the general assembly. It revealed that no progress had been made. At the same time five of the powers, all but the U.S.S.R., issued a joint statement explaining their objections to the soviet proposals.

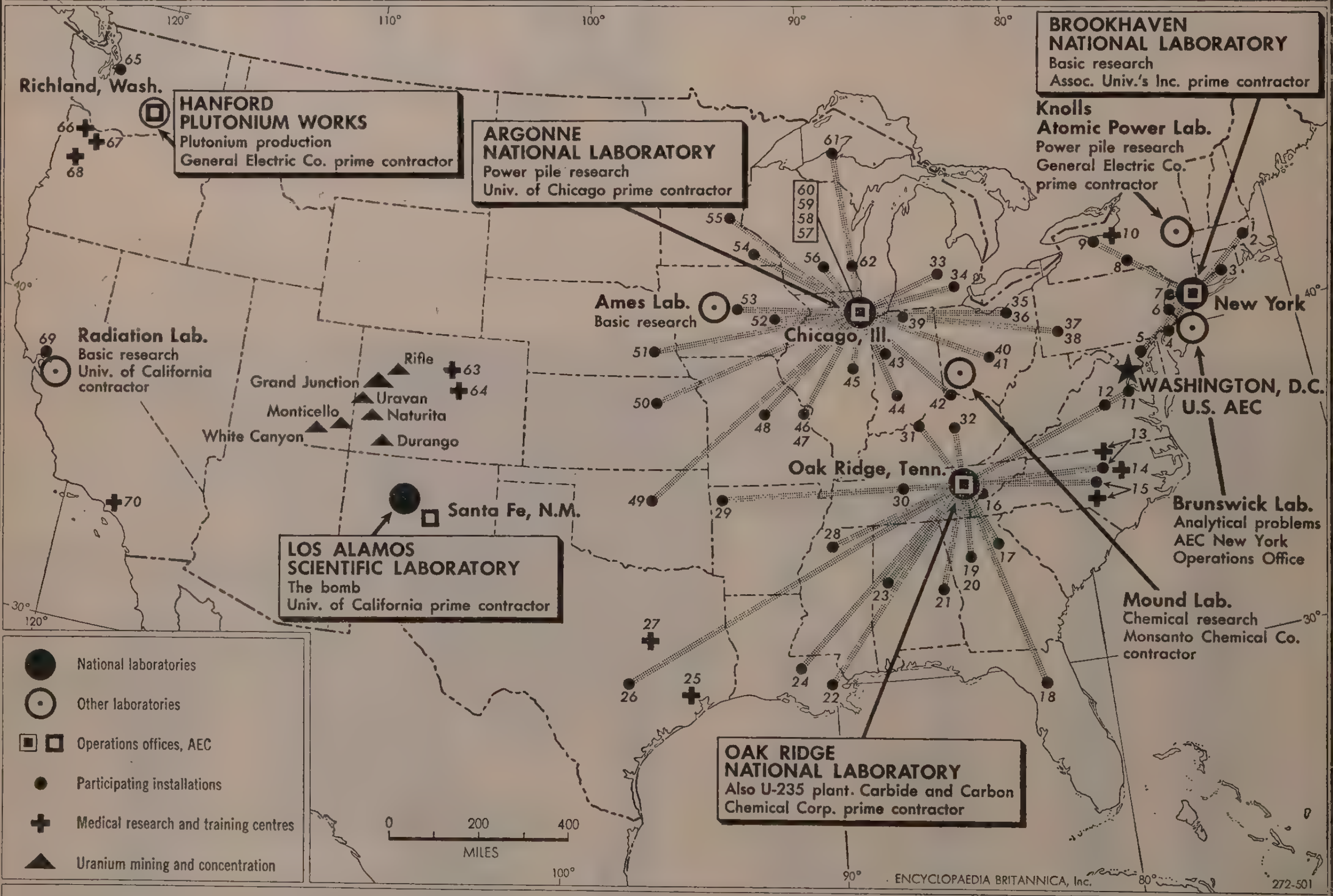
The statement summarized "three basic obstacles in the way of agreement." These were the proposals of the Soviet Union that (1) nations should continue to own explosive atomic materials, (2) nations continue to own, operate and manage facilities making or using dangerous quantities of such materials and (3) a system of control be adopted depending on periodic inspection of facilities the existence of which the national government concerned has reported to the international agency, supplemented by special investigations on suspicion of treaty violation.

The five powers believed that these proposals were insufficient to prevent the sudden or clandestine diversion of atomic materials to purposes of war.

The General Assembly.—While the six-power secret talks were in progress, the debate over the control of atomic energy flared out again in the United Nations general assembly. In several addresses soviet Foreign Minister Andrei Y. Vishinsky (*q.v.*) accused the U.S. and Great Britain of plotting an atomic war. Sharp exchanges took place between Vishinsky and the representatives of the U.S., Great Britain and Canada.

It became obvious that many nations were extremely unhappy

ATOMIC ENERGY RESEARCH AND PRODUCTION ACTIVITY WITHIN THE UNITED STATES


120°
110°
100°
90°
80°
40°
30°
Richland, Wash.
HANFORD PLUTONIUM WORKS
Plutonium production
General Electric Co. prime contractor
ARGONNE NATIONAL LABORATORY
Power pile research
Univ. of Chicago prime contractor
BROOKHAVEN NATIONAL LABORATORY
Basic research
Assoc. Univ.'s Inc. prime contractor
Knolls Atomic Power Lab.
Power pile research
General Electric Co. prime contractor
Ames Lab.
Basic research
Chicago, Ill.
New York
WASHINGTON, D.C.
U.S. AEC
Radiation Lab.
Basic research
Univ. of California contractor
Rifle
Grand Junction
Uravan
Naturita
Monticello
White Canyon
Durango
Santa Fe, N.M.
LOS ALAMOS SCIENTIFIC LABORATORY
The bomb
Univ. of California prime contractor
Oak Ridge, Tenn.
Brunswick Lab.
Analytical problems
AEC New York Operations Office
Mound Lab.
Chemical research
Monsanto Chemical Co. contractor
OAK RIDGE NATIONAL LABORATORY
Also U-235 plant. Carbide and Carbon Chemical Corp. prime contractor
National laboratories
Other laboratories
Operations offices, AEC
Participating installations
Medical research and training centres
Uranium mining and concentration
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PARTICIPATING INSTALLATIONS AND MEDICAL RESEARCH TRAINING CENTRES (keyed to numbers on map)

1 Harvard Univ.
2 Massachusetts Inst. of Tech.
3 Yale Univ.
4 Univ. of Pennsylvania
5 Johns Hopkins Univ.
6 Princeton Univ.
7 Columbia Univ.
8 Cornell Univ.
9 Rochester Tech.
10 Univ. of Rochester
11 Catholic Univ. of America
12 Univ. of Virginia
13 Duke Univ.
14 Wake Forest Col.
15 Univ. of North Carolina
16 Univ. of Tennessee
17 Univ. of Georgia
18 Univ. of Florida
19 Emory Univ.
20 Georgia Inst. of Tech.
21 Alabama Polytech. Inst.
22 Tulane Univ. of La.
23 Univ. of Alabama
24 Louisiana State Univ. and A. and M. Col.
25 Rice Inst.
26 Univ. of Texas
27 Baylor Univ.
28 Univ. of Mississippi
29 Univ. of Arkansas
30 Vanderbilt Univ.
31 Univ. of Louisville
32 Univ. of Kentucky
33 Michigan State Col.
34 Univ. of Michigan
35 Case Inst. of Tech.
36 Western Reserve Univ.
37 Univ. of Pittsburgh
38 Carnegie Inst. of Tech.
39 Univ. of Notre Dame
40 Ohio State Univ.
41 Battelle Memorial Inst.
42 Univ. of Cincinnati
43 Purdue Univ.
44 Indiana Univ.
45 Univ. of Illinois
46 St. Louis Univ.
47 Washington Univ.
48 Univ. of Missouri
49 Oklahoma A. and M. Col.
50 Kansas State Col.
51 Univ. of Nebraska
52 State Univ. of Iowa
53 Iowa State Col.
54 Mayo Foundation
55 Univ. of Minnesota
56 Univ. of Wisconsin
57 Univ. of Chicago
58 Northwestern Univ.
59 Illinois Inst. of Tech.
60 Loyola Univ.
61 Michigan Col. of Min. and Tech.
62 Marquette Univ.
63 Univ. of Colorado
64 Univ. of Denver
65 Univ. of Washington
66 Univ. of Oregon
67 Reed Col.
68 Oregon State Col.
69 Univ. of California
70 Univ. of California at Los Angeles

over the prospect of becoming involved in an atomic war between the U.S. and the U.S.S.R. and that they were seeking a way to break the deadlock. Sir Benegal Rau, chief of the Indian delegation, suggested that the question be transferred to the United Nations International Law commission.

In a letter to the six sponsoring powers, Brig. Gen. Carlos P. Romulo, president of the general assembly, suggested the exploration of four possibilities: (1) a short-term armistice accompanied by an inspection system; (2) an interim prohibition on the use of atomic weapons, with adequate safeguards; (3) further compromises between the majority and minority plans for atomic energy control; and (4) a new approach based on an assessment of the present requirements of atomic energy for peaceful purposes.

An address by Vishinsky on Nov. 10 before the Special Political committee of the assembly was interpreted by most delegates as a final rejection of the majority plan.

In the course of the address Vishinsky said, "Right now we are utilizing atomic energy for our economic needs in our own economic interests. We are razing mountains; we are irrigating deserts; we are cutting through the jungle and the tundra; we are spreading life, happiness, prosperity, and welfare in places where the human footstep has not been seen for a thousand years."

It was subsequently noted that the version of Vishinsky's speech printed in the Moscow newspaper *Pravda* differed from the speech as delivered. It quoted him as saying, "We want to put atomic energy to blowing up mountains, changing the course of rivers, irrigating deserts, laying new lines of life there, where the human foot has rarely stepped."

On Nov. 14 the Special Political committee by a vote of 48 to 5 adopted a resolution introduced by France and Canada calling on the six sponsoring powers to continue their private talks in an attempt to solve the problem. The five negative votes were those of the soviet bloc.

Early in Dec. 1949, Gen. A. G. L. McNaughton, chairman of the United Nations Atomic Energy commission, in keeping with this resolution asked Gen. Carlos P. Romulo and Sir Benegal Rau to submit new proposals on the control of atomic energy. Replying on Dec. 16, Romulo suggested that the search for a permanent solution be suspended for a few months and an attempt made to arrive at a short-term interim agreement along the lines of his previous suggestions.

Three-Power Conferences.—Considerable interest was aroused by a secret meeting called by President Truman at Blair House in Washington on the evening of July 10, 1949. It was attended by the secretary of state, secretary of defense, temporary chairman of the joint chiefs of staff, chairman of the U.S. Atomic Energy commission and a group of congressmen representing the foreign affairs, military and atomic energy committees. It was later disclosed that the meeting had been called to discuss relations of the United States, Great Britain and Canada in the field of atomic energy. It was understood that the British government had requested secret data from the United States.

The situation was clarified on July 28 when President Truman announced that the three nations would hold exploratory talks on the question of sharing atomic information and allotting supplies of uranium ores.

The three-power conferences began in Washington on Sept. 20. The expressed purpose of the conference was to consider establishing a partnership for the joint utilization of materials, techniques and knowledge in the field of atomic energy.

U.S. Atomic Energy Commission.—The year 1949 was one of even greater progress and achievement than 1948 for the U.S. Atomic Energy commission. Chief emphasis was placed on the development and production of atomic weapons and of the fissionable materials required for their manufacture. Increasing attention was given to the design of new types of nuclear reactors. The research programs in the physical, biological and medical sciences were expanded, and important additions were made to the commission's laboratories.

The improved atomic bombs tested at Eniwetok in 1948 were put into production during 1949. Component parts were produced on an industrial basis by manufacturing concerns and special government facilities.

In collaboration with the U.S. geological survey, the commission continued the examination of virtually every rock formation in the country for uranium ores.

Fissionable materials were produced in 1949 in greater quantities than ever before. Increased shipments of ore from Canada and the Belgian Congo were supplemented by domestic production. The chemical and metallurgical plants which converted ore into "feed materials" for the Oak Ridge, Tenn., and Hanford, Wash., plants were put on a sound operating basis. Unit production costs were reduced 30% below the 1947 level, and intermediate stock piles were built up to adequate levels.

Installation of new equipment and improvements in operating technique reduced the cost of producing uranium 235 in the gaseous diffusion plant at Oak Ridge by 50%. In addition, the yield from a given amount of uranium was increased.

Improvements in the operation of the Hanford plutonium plant increased by 40% the amount of plutonium produced per dollar of operating cost.

A new uranium pile for the production of plutonium and a new plutonium metal fabrication plant began operations at Hanford in 1949.

Construction work was started at Oak Ridge on a $67,000,000 expansion of the plant for the production of uranium 235.

The "Breeder" Reactor.—On Nov. 28, 1949, L. R. Hafstad, director of the division of reactor development of the U.S. Atomic Energy commission disclosed that the final work was being done on the design of a "breeder" nuclear reactor, a uranium pile that would produce more fissionable fuel in the form of plutonium than it consumes in the form of uranium 235. He described this reactor as the greatest peacetime development in the history of atomic energy and said that it was hoped to build the device during the following year at the Nuclear Reactor Testing station near Arco, Ida. Construction of other reactors at Arco, including a materials testing reactor, was also being planned.

On Dec. 13 Hafstad revealed that his division was also working on another reactor of revolutionary design, a so-called homogeneous reactor. This device would employ nuclear fuel in a constantly circulating liquid form instead of a solid form. It was anticipated that this would eliminate the difficulty of removing the fission products, the nuclear "ashes" which clog up the reactor.

Research on a type of reactor suitable for ship propulsion was being carried on by the Argonne National laboratory near Chicago, Ill., and the Westinghouse Electric corporation.

An "intermediate power breeder reactor" which would generate power as well as breed some additional fuel was being designed at the Knolls Atomic Power laboratory near Schenectady, N.Y.

A reactor for research purposes, nearing completion at the Brookhaven National laboratory, Long Island, N.Y., was expected to begin operation in 1950.

Radioactive Isotopes.—An average of 400 shipments per month of radioactive isotopes was made during 1949 from Oak Ridge to laboratories all over the United States and to 22 foreign countries. Radioactive isotopes had been called the most useful research tool for biology and medicine since the discovery of the microscope.

The use of radioactive isotopes was constantly increasing. Physicians and biologists were using them as "tracers" to follow complicated biological processes in living organisms; to investigate the formation of the blood and body secretions; to understand the physiological action of hormones, vitamins and drugs; to delineate the changes in such diseases as diabetes, heart disease and kidney disease; and to follow the growth and death of cancer cells.

Radioactive isotopes were also being used in researches in physics, chemistry, metallurgy and many industries.

For many purposes it is necessary to incorporate the radioactive isotope in a complex compound such as a sugar, protein or dye. The U.S. Atomic Energy commission entered into contract with six organizations for the production of more than 65 such compounds.

An important development was the experimental use of radioactive cobalt as a substitute for radium in the treatment of cancer.

The division of biology and medicine of the commission was carrying on an extensive program to investigate the effects of radioactivity on living organisms and to devise safeguards.

New Atom Smashers.—Two particle accelerators or atom smashers of gigantic proportion were under construction by the U.S. Atomic Energy commission. They would dwarf the 184-in. cyclotron at Berkeley, Calif., which was in 1949 the largest in the world.

At Brookhaven National laboratory, scientists were building a proton synchrotron which had been named the cosmotron. It would impart energies of 2,000,000,000 to 3,000,000,000 ev to subatomic particles. An even larger proton synchrotron, the bevatron, was being built at the Berkeley Radiation laboratory. It would develop 5,000,000,000 to 7,000,000,000 ev.

Smaller atom-smashing devices were completed or were nearing completion at the Brookhaven, Argonne, Oak Ridge and Los Alamos laboratories. In addition the commission was financing researches in the physical sciences in more than 50 university and industrial laboratories.

Congressional Investigation.—On May 22, 1949, Sen. Bourke B. Hickenlooper, former chairman and ranking Republican member of the congressional joint committee on atomic energy, issued a statement charging Chairman Lilienthal of the U.S. Atomic Energy commission with "incredible mismanagement" and demanding his resignation. Two events preceded his action, the discovery that a commission fellowship had been awarded to an acknowledged Communist, and the disclosure that a container of about 9 or 10 oz. of uranium oxide enriched with 32 g. of uranium 235 was missing at the Argonne National laboratory.

Hearings were held before the congressional joint committee on atomic energy. The committee brought in a majority and a minority report in October, splitting on straight party lines. The ten Democratic members signed the majority report; six of the eight Republican members signed the minority report. The majority report held that all of the charges had been satisfactorily answered and, moreover, that the commission had done an exceptionally fine job of administering the atomic energy program.

The minority report virtually ignored the subject matter of the hearings and, taking a new tack, raised a new issue, charging the commission with hesitation and insufficient boldness in initiating a major development program.

Changes in Membership of Commission.—In Nov. 1949, Lilienthal gave President Truman his resignation as chairman of the U.S. Atomic Energy commission, to take effect at the end of the year. He gave as his reasons for resigning the length of his public service, financial considerations for his family and his desire to enter into public discussions of atomic energy with greater freedom than was possible as chairman of the commission.

On May 9, 1949, President Truman appointed Henry DeWolf Smyth and Gordon Dean to the U.S. Atomic Energy commission. They replaced Robert F. Bacher and W. W. Waymack, who had resigned.

Sumner T. Pike and Lewis L. Strauss continued as members of the commission during 1949. (*See* also METALLURGY; PHYSICS; URANIUM.)

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FILMS OF 1949.—*Atomic Fury* (World in Color Productions).

(D. Dz.)

Atom Smashers: *see* ATOMIC ENERGY.

Attlee, Clement Richard (1883–), British prime minister, was born in London on Jan. 3. After leaving Oxford university, he worked in the East End of London and in 1913 became a lecturer at the London School of Economics. In World War I he served in Gallipoli, Mesopotamia and France. He was elected mayor of Stepney in 1919, member of parliament for Limehouse in 1922, and in the second Labour government he was chancellor of the duchy of Lancaster and later postmaster general. He was deputy prime minister in the wartime coalition government and became prime minister when the Labour party achieved a majority in July 1945.

In April 1949 he presided over the second meeting within a year of the commonwealth prime ministers, and in January he held talks with Sir Basil Brooke, prime minister of Northern Ireland. In March he flew to Germany where he saw the Berlin air lift and had discussions with western German political leaders. In the autumn there was widespread feeling that he would dissolve parliament and call a general election, but on Oct. 13 he issued a statement declaring that he would not recommend that the king dissolve parliament in 1949. During the absence of senior cabinet members in August and September—Sir Stafford Cripps (*q.v.*), because of illness and later at Washington; Ernest Bevin (*q.v.*), on holiday, at Strasbourg and later in the United States; and Herbert Morrison, lord president of the council, at Strasbourg—he undertook control of their departments. He again acted for the foreign secretary in December when Ernest Bevin was on leave.

BIBLIOGRAPHY.—Clement Attlee, *The Labour Party in Perspective—and Twelve Years Later*, rev. ed. (London, 1949); Vincent Brome, *Clement Attlee* (London, 1949).

Audiovisual Education: *see* MOTION PICTURES.

Auriol, Vincent (1884–), French statesman, was born on Aug. 27 at Revel (Haute-Garonne department). He was elected to the chamber of deputies as Socialist member for Muret in 1904, and was constantly reelected up to the collapse of France in June 1940. Auriol's first cabinet post was in Léon Blum's popular front government in 1936, when he was appointed minister of finance. In that capacity he negotiated the tripartite monetary accord with the U.S. and Great Britain. He was minister of justice in the Camille Chautemps government (1937–38) and held a cabinet post in the second and short-lived Blum government in 1938.

Auriol protested against the armistice of 1940 and against Marshal Henri Philippe Pétain's efforts to establish totalitarian rule, and was imprisoned by Vichy authorities for several months. In Oct. 1943 he escaped to London where he joined General Charles de Gaulle's movement. He became a member of the consultative assembly set up in Paris after its liberation in Aug. 1944. In Nov. 1945 he was appointed minister of state without portfolio in the De Gaulle government. He was elected president of the French constituent assembly on Jan. 31, 1946, and on Jan. 16, 1947, became the first president under the constitution of the Fourth Republic.

Speaking at Tours, on May 7, 1949, he said that France remained convinced that there would be no lasting peace and prosperity without an association of national sovereignties. On May 29, 1949, he arrived at Algiers on the first presidential visit since that of Gaston Doumergue in 1930 and during his stay visited Bone, Oran, Constantine and Tlemçen. (*See* also France.)

Austin, Warren Robinson (1877–), U.S. delegate to the United Nations, was born at Highgate, Vt., Nov. 12, and was graduated from the University of Vermont, Burlington, Vt., in 1899. He practised law and became active in Republican politics. Elected U.S. senator from Vermont in 1931 to fill an unexpired term, he was re-elected in 1934 and 1940, but resigned to become acting U.S. representative to the United Nations, by appointment of Pres. Harry S. Truman, June 5, 1946. On Jan. 13, 1947, Austin became U.S. representative at the seat of the United Nations, with the rank of envoy extraordinary and plenipotentiary, and U.S. representative on the Security Council, as well as member of the U.N. Atomic Energy commission. In Feb. 1949 he termed soviet demands for limitation of armaments and control of the atomic bomb a "succotash" of earlier soviet proposals that the U.N. general assembly had turned down. In the latter body on April 13, when soviet Deputy Foreign Minister Andrei A. Gromyko charged that the North Atlantic treaty was an "aggressive" conspiracy against the U.S.S.R., Austin replied that the pact need worry no state conforming to the principles of the U.N. charter; that soviet propaganda against the treaty was dangerous because it confused and misled nationals of other states; and that Russian isolation was of its own making. On Sept. 29, after President Truman's disclosure of the atomic explosion in the U.S.S.R., Austin reiterated the U.S. belief that the plan approved by the U.N. assembly for atomic control appeared to be the only one "which would be likely to prevent atomic war," and he charged that the U.S.S.R.'s counter-proposals failed to provide for either international control of atomic production and stocks or for adequate inspection of such production.

Australia, Commonwealth of. A self-governing member of the British Commonwealth of Nations, situated in the southern hemisphere, Australia has an area of 2,974,581 sq.mi. The total 1947 census figure of 7,580,820 excludes full blood aboriginals estimated at 47,000; half-castes numbered 24,881 in 1944. Chief towns (pop., June 30, 1947): Sydney (1,484,434); Melbourne (1,226,923); Brisbane (402,172); Adelaide (382,604); Perth (272,586); Newcastle (127,188); Hobart (76,567). Language: English. Religion: Christian (census 1933: Anglican 2,565,118; Roman Catholic 1,161,455; Presbyterian 713,229; Methodist 684,022; other Christians 603,914); Jewish 29,600. Ruler: King George VI; governor general: William John McKell; prime ministers in 1949: Joseph Benedict Chifley and, from December, Robert Gordon Menzies.

History.—The main event of the year 1949 was the general election held on Dec. 10, in which the Labour government was defeated.

Several decisions of the high court given during the year had a profound effect on public life and on the relations between the commonwealth and the states. The high court held that the commonwealth no longer had the power to ration petrol. As a result, petrol was derationed; but as the commonwealth largely depended on dollar area imports, a severe shortage developed. The petrol question displaced the Bank Nationalization act, 1947, as a major election issue. The privy council upheld the high court in declaring vital sections of the Bank Nationalization act invalid.

Social service expenditure for 1948–49 at less than £A81,000,000 remained below the estimate, mainly because of the protracted struggle between the commonwealth government and the British Medical association over the Pharmaceutical Benefits scheme. Under instructions from the B.M.A., the vast majority of doctors refused to issue free prescriptions on government forms. The B.M.A. successfully challenged the act before the high court, which by a majority held that the compulsion for doctors to use government prescriptions and forms was an unconstitutional "civil conscription." The wider National Health Service act, passed in 1948, was not implemented.

The minister for external territories, E. J. Ward, was cleared of charges of corruption by a judge of the supreme court of South Australia functioning as royal commissioner.

Communism.—Politically, the increased tension between the Communist movement and the rest of the community was the outstanding development. A coal strike lasting from June 27 to Aug. 15 affected practically all hard coal mines in the country and paralyzed the industrial life of the country. It arose out of the decision by the Communist-dominated executive of the Miner's federation not to await the decision of the Coal Industry tribunal on a claim for long-service leave. The strike was clearly political in character. The commonwealth parliament reacted by passing an act prohibiting the payment or receipt of money for the continuance of the strike. The commonwealth arbitration court was given power to grant injunctions for the purpose of preventing breaches of the act. When leaders of the Miner's federation and other unions refused to disclose the use of their funds, they were sent to prison for contempt of court; they were released after the collapse of the strike and after having apologized to the court. The commonwealth also used troops to work opencut mines. The strike collapsed completely without any new concession being obtained by the miners. The Coal Industry tribunal later awarded long-service leave, subject to certain penalties for the disruption caused by the strike.

Immigration.—The flow of immigrants increased vastly during the year; 75,000 immigrants arrived in the first six months. The government rigidly adhered to its exclusion of non-white immigrants.

In 1948–49, 52,573 new houses were completed, but the coal strike affected building in the second half of the year.

External Affairs.—H. V. Evatt was president of the third session of the general assembly of the United Nations. Australian representatives were active in supporting the recognition of the new state of Israel and the sovereignty of the new republic of Indonesia. Australia sent an official observer to the Conference of Asian Nations convened by the Indian prime minister at New Delhi, India, which strongly condemned the Netherlands police action in Indonesia. Australia also took a lead in demanding U.N. investigation of the trial of religious leaders in Hungary and Bulgaria. As one of the main wheat-exporting countries, Australia ratified the International Wheat agreement.

In April, Chifley attended the conference of British Commonwealth of Nations prime ministers in London, which resulted in a declaration that the republican status of India was compatible with continued membership of the commonwealth. A few months later, J. J. Dedman, minister for postwar reconstruction, attended in London a conference concerning the financial crisis of Great Britain and the sterling area. The Australian Nationality and Citizenship act, 1948, came into force on Jan. 26, 1949. It was the first to recognize officially Australian citizenship.

Defense.—Expenditure for defense services was £A61,000,000, slightly above estimates. Expenditure for total war and repatriation services at nearly £A150,000,000 was considerably above estimates. Corresponding estimates for 1949–50 were £A60,000,000 and £A121,000,000. A new aircraft carrier, H.M.A.S. "Sydney," joined the fleet. The most important naval manoeuvres after World War II were held by the joint Australian and New Zealand navies in October. Further progress was made on the guided missiles project in South Australia.

Finance and Economics.—The budget was balanced at £A535,000,000. National income rose by 12% to a new record of £A1,955,000,000, nearly 2½ times the prewar figure. The income of primary producers still showed by far the greatest proportional increase, as the exceptional world demand for wool at very high prices continued through the year. Substantial price rises accounted for an increase of the "C" rate index of retail prices by nearly 9% between Sept. 1948 and Sept. 1949.

Exports of merchandise and gold rose to £A536,000,000 as against imports of £A415,000,000. Australia's international balance of payments resulted in a surplus of £A41,000,000, but the prime minister gave grave warning of the dangers to Australia's prosperity that would follow from a world depression and from the dollar crisis of the sterling area. To safeguard against a slump, Australia maintained a large sterling balance estimated at more than £A400,000,000 in London. The government made another gift of £A10,000,000 to the United Kingdom. Australia followed the devaluation of the British pound, thus maintaining the ratio of £4 British to £5 Australian. Australia agreed to cut its dollar imports by 25% and in October obtained a loan of $20,000,000 from the International Monetary fund.

Of many industrial development plans, the official start of the Snowy River Power scheme, which would provide a large proportion of Australia's power and conserve water for irrigation in the Murray and Murrumbidgee valleys, was the most important.

Despite substantial immigration, there were still labour and material shortages in almost every industry. About 30,000 new immigrants were absorbed in national production. Full employment was maintained. The commonwealth court of arbitration was, for the second part of the year, mainly engaged in taking evidence on a trade union claim for a basic minimum wage of £A10. (W. Fn.)

Education.—(1945) state schools 8,447, pupils 726,440, teachers 31,061; private schools 1,817, pupils 249,024, teachers 11,799; technical schools 114, pupils 110,841, teachers 5,175; business colleges 109, pupils 23,270, teachers 659; universities (1947) 8, students 30,477, teachers 2,141.

Banking and Finance.—Budget: (1948–49) revenue £A535,000,000, expenditure £A535,000,000; (1949–50 est.) revenue £A532,000,000, expenditure £A567,000,000. National debt (Dec. 1948) £A2,829,000,000. Gold and foreign exchange (Aug. 1949) $1,231,000,000 (U.S.). Bank deposits (Aug. 1949) £A678,000,000. Monetary unit is the Australian pound with an exchange rate after Sept. 18, 1949, of £A1=$2.228 U.S.

Foreign Trade.—Imports: (1948) £A338,000,000; (1949, six months) £A215,000,000. Exports: (1948) £A407,000,000; (1949, six months) £A282,000,000.

Communications.—Roads (1945): 500,000 mi. Licensed motor vehicles (Dec. 1948): cars, 669,688; commercial vehicles, 389,394. Government railways (1947–48): 27,123 mi. Shipping (July 1948): number of merchant vessels of 100 tons and upward, 352; total tonnage, 527,647. Air transport (1947): miles flown, 33,963,000; passengers flown, 1,035,695; cargo carried, 18,711 tons; air mail carried, 1,101 tons. Telephones (May 1949): subscribers, 1,022,174. Radio licences (May 1949): 1,916,310.

Agriculture.—Main crops (metric tons, 1948–49): wheat 5,162,000; oats 540,000; maize 152,000; barley 450,000; sugar cane, raw value, 930,000; potatoes 569,000. Livestock (March 1948): sheep 102,559,000; cattle 13,785,000; pigs 1,255,000; horses 1,165,000. Wool production (metric tons, greasy basis, 1948–49) 490,000. Food production (metric tons, 1948–49): butter 163,900; cheese 44,000; meat 987,100, of which 584,700 were beef.

Industry.—Manufacturing establishments (1948), 37,375; persons employed, 848,872. Fuel and power (1948; 1949, six months, in parentheses): coal (metric tons) 15,059,000 (7,114,000); lignite (metric tons) 6,792,000 (3,622,000). Raw materials (1948; 1949, six months, in parentheses): gold (fine ounces) 890,000 (448,000); pig iron (metric tons) 1,155,000 (509,000); steel ingots and castings (metric tons) 1,236,000 (571,000). Cement production (metric tons, 1948; 1949, six months in parentheses) 1,004,000 (527,000). Employment in manufacturing (index 1937=100) 1948: 158; 1949 (six months): 161.

FILMS OF 1949.—*Australia* (Encyclopædia Britannica Films Inc.).

Austria. A republic in central Europe, Austria has an area of 32,388 sq.mi. Pop. (Oct. 1948 est.): 6,953,000. Chief towns (pop., June 1948 est.): Vienna (cap., 1,730,613); Graz (226,229); Linz (184,336); Salzburg (106,919); Innsbruck (98,561); Klagenfurt (65,950). Language: German 98%, other 2% (mainly Slovene in Carinthia). Religion: mainly Roman Catholic. President of the republic: Karl Renner; chancellor (prime minister): Leopold Figl. During 1949 the Austrian government had jurisdiction throughout Austria, with certain limitations regarding matters control over which was reserved to quadripartite decision in the Allied Council for Austria. By Dec. 31, 1949, members of the A.C.A. were: France, Général de Corps d'Armée Emile-Marie Béthouart; United Kingdom, Lieut. Gen. Sir Alexander Galloway (succeeded from Jan. 1, 1950, by Maj. Gen. T. J. W. Winterton); U.S., Lieut. Gen. Geoffrey Keyes; U.S.S.R. (from May 1949), Lieut. Gen. V. P. Sviridov.

History.—A return to normal political life was the salient feature of 1949 in Austria. The growing self-confidence of the coalition government under Chancellor Figl, which continued in office (with some changes) after the general election on Oct. 9, meant that, in practice, less importance than hitherto attached to the continuing failure of the Council of Foreign Ministers to reach agreement on a peace treaty.

There was, indeed, during the year, a mitigation of Allied control in certain minor respects. Beginning Jan. 1 the United Kingdom handed over to the Austrian authorities full responsibility for the control of the Austro-Italian frontier; in February airfields in the United States zone were restored to the Austrian government for agricultural purposes; a relaxation of the control over traffic of merchandise between the soviet and the western zones was announced by the soviet authorities to take effect from May 25; and at a meeting of the Allied council on July 19 notice was given of the relinquishing of certain controls over Austria's mail and telegraph administration. Finally, the council, without yielding on the principle that Allied approval was necessary for any addition to the three recognized political parties—People's party (Christian Social), Socialists and Communists—in fact attempted no interference with the formation of new political groups. The new electoral law, indeed, which was approved by the Allied council on June 24, specifically provided that any electoral group that could muster 100 supporters was entitled to put up candidates in the general election.

The meetings of the foreign ministers' deputies were resumed (for the sixth time in three years) on Feb. 9 in London. The soviet deputy at once brought up again the territorial demands and claims for reparations of Yugoslavia—which provoked the Austrian government into a fresh assertion that Austria would not accept any treaty involving loss of territory or the creation of an autonomous zone for the Slovenes of Carinthia. The Yugoslav delegate, A. Bebler, was given a hearing, but his compromise proposals were not acceptable to the three western powers. A similar deadlock developed over the reparations issue, the compensation to the U.S.S.R. for those German assets to

AUSTRIAN BORDER PATROL at the Loibl pass in Lower Carinthia. Yugoslav claims on this region, based on the presence of a Slovene minority, were given up during the peace treaty talks of June 1949, but no final terms were drawn up during the year

which a claim had been relinquished and the question of compulsory repatriation of displaced persons, etc. When the talks were adjourned on April 8, to enable the governments to be consulted, the western deputies made a significant gesture in abandoning all reparations claims in their zones, subject to the Austrian government assuming an obligation to liquidate all Reich German ownership of the German assets in question.

By the time the Council of Foreign Ministers itself met in Paris (May 23–June 20) the situation had been substantially eased by the abandonment by the soviet government of support for Yugoslavia's territorial claims. The ministers agreed that, while no reparations should be exacted, Yugoslavia should retain all Austrian property rights and interests within Yugoslavia; that the U.S.S.R. should receive from Austria (1) $150,000,000 in freely convertible currency to be paid within a period of six years; (2) the assets of the Danube Shipping company in Bulgaria, Hungary and Rumania as well as eastern Austria; (3) concession rights to oil production areas equivalent to 60% of Austrian oil production, as also to 60% of all exploration areas in eastern Austria which come in the category of German assets, and that, in return, the U.S.S.R. should relinquish all property, interests or rights held as German assets or war booty, with the exception of the oil and shipping assets previously conceded. But the deputies were unable to compose their differences in the time allotted (by Sept. 1), and the negotiations were taken up again by the ministers in New York city on Sept. 23.

In internal politics, the Communists were unable to make any real impression on the emphatically western orientation of the country. Relations between the Socialist party and the Austrian People's party became somewhat strained in the middle of the year because of the latter's reputed electoral bargaining with certain prominent former nazis, and on July 13 a bill for a further amnesty for certain groups of incriminated nazis, which had been sponsored by the People's party, was defeated in parliament. But the makers of Socialist policy made it clear that they had no intention of breaking up the coalition before the general election; and, in the end, both the principal parties pledged themselves to its continuance, whatever the outcome of the polling.

The election produced little change in the balance of parties. The People's party won 77 seats, the Socialists 67, the Communists 5 and the Independents 16. This represented a loss of 8 seats by the People's party and 9 by the Socialists. The Communists gained one seat, chiefly on account of the defection of a left-wing Socialist leader, Erwin Scharf, who set up a left bloc shortly before the elections.

In February an occupation costs levy was imposed to defray the outstanding costs for 1948. On March 24 a four-year plan for Austrian agriculture was issued, to be operated within the framework of the European Recovery plan. The outlay was estimated at 4,900,000,000 schillings, with finance largely supplied by the farmers themselves. On May 8 the government announced its program of financial consolidation to replace the wage-price agreement of Sept. 1948. Trade agreements were made with Italy, Hungary (under U.S. auspices) and Germany. (*See* also COUNCIL OF FOREIGN MINISTERS.) (W. H. CAR.)

Education.—(1948–49) Elementary schools 5,016, pupils 829,326, teachers 25,601. Secondary schools (including commercial schools and training colleges) 695, pupils 73,949, teachers 10,301. Universities 4 and institutions of higher education 9, students 31,959.

Finance and Banking.—Budget estimates: (1948) revenue 5,294,000,000 schillings, expenditure 5,891,000,000 schillings; (1949) revenue 6,090,000,000 schillings, expenditure 7,531,000,000 schillings. Domestic debt (Dec. 1948) 10,671,000,000 schillings. Currency circulation (Sept. 1949) 5,817,000,000 schillings. Gold reserve (Sept. 1949) $4,900,000. Bank deposits (Aug. 1949) 5,367,000,000 schillings. Monetary unit: the *schilling*, which was devalued on Nov. 21, 1949, from the former official rate of 10 to the U.S. dollar to a basic rate of 14.4 to the U.S. dollar.

Foreign Trade.—Imports: (1948) 2,603,000,000 schillings; (1949, six months) 1,996,000,000 schillings. Exports: (1948) 1,984,000,000 schillings; (1949, six months) 1,583,000,000 schillings. Main imports: coal, cotton, wool and vegetables. Main exports: iron and steel products, lumber and paper.

Transport and Communications.—Roads (1947): 53,000 mi. Licensed motor vehicles (Dec. 1948): cars 26,775, commercial vehicles 39,275. Railways (1948): 3,758 mi.; passenger miles 4,414,000,000; freight net ton-miles 3,700,000,000. Telephones (1949): subscribers 219,164. Radio receiving set licences (1948) 892,058.

Agriculture.—Main crops (in metric tons, 1948): wheat 261,000; barley 125,000; oats 225,000; rye 289,000; potatoes 2,069,000. Livestock: cattle (May 1949) 2,125,000; sheep (Dec. 1948) 454,000; pigs (May 1949) 1,431,000; horses (Dec. 1948) 284,000; poultry (Dec. 1948) 4,114,000.

Industry.—Insured persons employed (Aug. 1949) 1,978,000. Fuel and power (1948): coal (in metric tons) 178,000; lignite (in metric tons) 3,336,000; natural and manufactured gas 388,000,000 cu. metres; electricity 4,213,000,000 kw.hr. Raw materials (in metric tons 1948): pig iron 613,000; steel ingots and castings 648,000. Manufactured goods (1948): cement 721,000 metric tons; leather shoes 2,269,000 pairs.

Autobiography: *see* AMERICAN LITERATURE; etc.
Automobile Accidents: *see* ACCIDENTS.

Automobile Industry.

In 1949 the long-standing U.S. production record of 1929 was shattered, with an output of 6,255,401 vehicles, one-sixth greater than the peak set 20 years before. Passenger car production reached a total of 5,119,911, an increase of 11.6% over 1929, 35.5% over 1941 and 31% above 1948. Motor truck output attained a mark of 1,135,490, a gain of 47.3% over 1941. Compared with 1948, however, there was a decrease of 18.5%. (*See* Table I.)

The 1949 wholesale value of passenger cars was estimated at $6,900,000,000, an increase of 42% over 1929, 169% over 1941 and 42% over 1948. Motor truck wholesale value was estimated at $1,560,000,000, an increase of 175% over 1929, 46% over 1941, but a decrease of 16% below 1948. The combined wholesale value of passenger cars, motor trucks and motor buses was $8,460,000,000, surpassing the previous peak of 1948 by 26%.

The activities of the U.S. automotive industry as a whole remained remarkably steady throughout the year in terms of number of units produced, despite the strike in one large company during part of May, and the major strikes in the steel and coal industries during the latter part of the year. This relative stability was made possible by purchasing reserve supplies of steel, coal and other materials in anticipation of a possible major strike in those industries.

Table I.—*Motor Vehicle Factory Sales From Plants Located in United States, 1949*

	Passenger cars	Motor trucks	Motor coaches	Total
January	326,019	104,599	658	431,276
February	324,547	101,700	418	426,665
March	402,402	115,171	545	518,118
April	436,392	106,212	514	543,118
May	394,703	86,200	564	481,467
June	493,882	99,126	632	593,640
July	483,261	95,348	439	579,048
August	557,370	99,850	444	657,664
September	534,493	91,389	298	626,180
October	487,891	84,704	322	572,917
November	381,951	72,749	308	455,008
December*	297,000	73,000	300	370,300
Total	5,119,911	1,130,048	5,442	6,255,401

*Estimated.
Source: Automobile Manufacturers Association.

Factory sales of passenger cars to the U.S. domestic market reached a total of 4,969,928, surpassing the 1929 total of 4,587,400 by 8.2%. Motor truck factory sales to the U.S. domestic market in 1949 was 1,007,938, compared with 1,173,115 in 1948, or a decrease of 14.2%. However, 1949 factory sales to U.S. domestic market surpassed all years prior to 1948. (*See* Table II.)

As in the preceding year, foreign markets continued to reflect shortages in U.S. dollars, resulting in a decrease of 35.6% in factory sales of passenger cars to foreign markets, and a decline of 37.3% in the motor trucks exported, or a combined decrease of 36.5%. The decrease was progressive throughout the year, with the lowest point reached in December.

Passenger car factory sales to foreign markets in 1949 comprised 2.9% of total passenger car factory sales, while motor truck exports represented 11.3%, compared with 6% for passenger cars and 14.8% for motor trucks in 1948. In 1947 passenger car exports represented 7.3% and motor trucks 20.3%. In 1929 passenger cars exported comprised 9.8% of total passenger car factory sales, motor trucks 36.7% of total truck factory sales, or combined car and truck exports of 13.7% of total factory sales. (*See* Table II.)

Table II.—*Factory Sales to U.S. Domestic and Foreign Markets, 1949*

	Passenger cars		Motor trucks		Motor coaches	
	Domestic	Foreign	Domestic	Foreign	Domestic	Foreign
January	312,199	13,820	91,282	13,317	618	40
February	310,343	14,204	88,540	13,160	326	92
March	385,834	16,568	99,925	15,246	423	122
April	422,149	14,243	91,808	14,404	494	20
May	380,489	14,214	75,518	10,682	511	53
June	480,009	13,873	89,174	9,952	522	110
July	471,752	11,509	85,427	9,921	399	40
August	544,630	12,740	89,989	9,861	420	24
September	521,524	12,969	82,487	8,902	274	24
October	476,461	11,430	76,584	8,120	275	47
November	373,838	8,113	66,090	6,659	279	29
December*	290,700	6,300	66,300	6,700	273	27
Total	4,969,928	149,983	1,003,124	126,924	4,814	628

*Estimated.
Source: Automobile Manufacturers Association.

The largest foreign demand for passenger cars in 1949 came from the Union of South Africa, Belgium, Luxembourg, Venezuela, Mexico, Hawaii, Cuba and Brazil. The leading markets for motor trucks came primarily from South American countries, particularly from Brazil and Venezuela, but Belgium, Luxembourg, South Africa, Mexico and India furnished a relatively strong demand for motor trucks. Even though the overall trend in exports was downward during the year, U.S. manufacturers continued to make every effort to keep foreign markets alive, since normally exports had accounted for approximately 10% of the industry's annual production.

The demand for motor trucks continued the trend toward a higher proportion of the lighter-type of vehicles. During the first 11 months of 1949, 45.3% of motor truck factory sales were in the class of 5,000 lb. and less gross vehicle weight (G.V.W.) compared with 36% in 1948 and 30.5% in 1947. The class 5,001–10,000 lb. G.V.W. comprised 25% of total truck factory sales in 1949, 19.2% in 1948 and 14.7% in 1947. (*See* Table III.)

Table III.—*Motor Truck Factory Sales by Maximum Gross Vehicle Weight* Groups From Plants Located in United States*

	1947 (1st 11 months)		1948 (1st 11 months)		1949 (1st 11 months)	
G.V.W. in lb.	Units	Per cent	Units	Per cent	Units	Per cent
5,000 and less	341,641	30.5	452,218	36.0	479,396	45.3
5,001 to 10,000	165,170	14.7	240,910	19.2	264,631	25.0
10,001 to 14,000	249,324	22.3	169,373	13.5	78,353	7.4
14,001 to 16,000	262,196	23.5	258,022	20.5	163,330	15.5
16,001 to 19,500	37,277	3.3	70,136	5.6	33,929	3.2
19,501 to 26,000	39,109	3.5	46,042	3.7	21,809	2.1
26,001 and over	24,348	2.2	19,436	1.5	15,600	1.5
Total	1,119.065	100.0	1,256,137	100.0	1,057,048	100.0

*Gross vehicle weight includes weight of the truck and the maximum load.
Source: Automobile Manufacturers Association.

Of the special-purpose vehicles produced in 1949, station wagons showed the largest increase. Cab-over-engine trucks and school-bus chassis showed a considerable drop in output, as did six-wheel trucks. Multistop delivery trucks, used by dairies, laundries and other door-to-door delivery type services, experienced a small increase during the year. (*See* Table IV.)

With the increase in number of new vehicles added to the rolling stock on the highways, the demand for replacement parts and accessories in 1949 reflected a passing of the most critical

Table IV.—*U.S. Factory Sales of Special-Purpose Vehicles*

Types	1st 9 months 1949	1948
Station wagons	85,271	78,925
Cab-over-engine trucks	10,896	24,195
Multistop delivery trucks	16,579	15,905
Trucks with diesel engines	4,028	4,329
Trucks with 6 wheels and 3 axles	3,435	4,496
School bus chassis	12,314	20,810

Source: Automobile Manufacturers Association.

need for repairs. There was a decline of 23% in the dollar value of replacement parts and accessories sold in 1949, compared with the preceding year. Even with such a sizable decline, the aggregate dollar value of $1,962,000,000 represented one of the major industrial activities of the United States. The preceding year established a peak of $2,553,000,000. (*See* Table V.)

The shortage of steel and other raw materials was almost at an end in 1949, although steel at times was a limiting factor in production, especially toward the end of the year when major strikes in the steel and coal industries were in progress. In the first eight months of 1949, the automotive industry consumed 18.3% of total finished steel produced in the United States, compared with 15.3% in 1948 and 14.7 in 1947. The industry also consumed 39.5% of all alloy steels except stainless, and 20.5% of the total stainless-steel shipments. The industry used 16.9% of the carbon steel.

Table V.—*Wholesale Value of Automotive Replacement Parts and Accessories Sales to U.S. Domestic Market*

(In thousands of dollars)

	1941	1947	1948	1949
January	$51,337	$181,119	$185,849	$197,158
February	51,548	201,061	203,944	173,658
March	52,104	194,672	218,980	167,358
April	43,061	178,324	251,844	171,986
May	54,603	212,623	192,566	157,077
June	67,171	175,731	254,363	172,172
July	56,704	184,101	213,984	137,160
August	72,249	256,836	244,891	167,084
September	74,019	198,352	202,220	153,414
October	72,960	227,763	268,940	155,000*
November	70,519	254,845	156,791	155,000*
December	51,937	88,095	158,851	155,000*
Total	$718,212	$2,353,522	$2,553,223	$1,962,067*

*Estimated.

Source: Bureau of Internal Revenue excise tax collections on automotive parts capitalized by tax rate.

Employment in the industry in 1949 averaged 655,000 production workers, and a total of 782,000, including salaried workers. The number of production workers was only slightly below the 657,600 employed in 1948. (*See* Table VI.) Earnings per week averaged $66.40; hours of work, 39.2. Average hourly earnings for production workers were $1.695. The aggregate pay roll of production workers in 1949 was $2,265,000,000, or $43,000,000 a week.

Table VI.—*Employment in U.S. Motor Vehicle and Parts Manufacturing Industry*

(Number of production workers—in thousands)

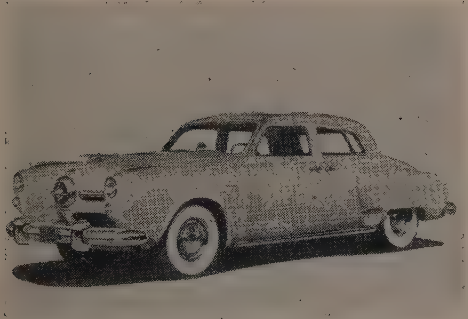
	1941	1947	1948	1949
January	559	626.9	676.6	664.6
February	569	656.4	616.6	648.9
March	579	657.1	671.2	646.1
April	586	660.7	658.3	648.8
May	597	618.5	651.7	600.5
June	604	649.7	633.8	646.1
July	570	641.6	669.9	669.5
August	497	637.4	641.8	678.0
September	560	655.8	660.8	686.2
October	583	650.7	671.7	665.1
November	592	658.5	669.3	655.0*
December	544	672.6	670.3	655.0*
Average	570	648.8	657.6	655.0*

*Estimated.

Source: U.S. Bureau of Labor Statistics, revised.

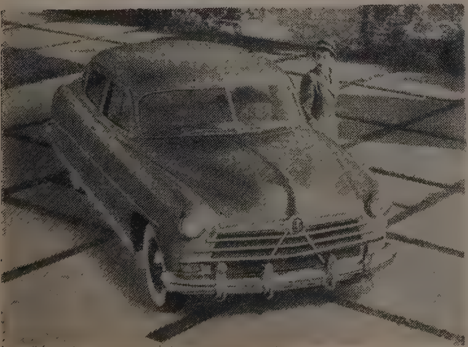
Registrations.—Preliminary registration totals released by the U.S. bureau of public roads for the end of 1949 were 35,491,000 passenger cars and 7,807,000 motor trucks and buses, or a combined total of 43,298,000. This was an increase of 6.7% over 1948 for passenger cars and 6.1% for motor trucks. Compared with the prewar year 1940, motor truck registrations in 1949 reflected a greater increase than that of passenger cars, with a gain of 68%, as against an increase of 30% for passenger cars. The largest numerical increase in registrations occurred in the states of California, Texas and New York. (*See* Table VII.)

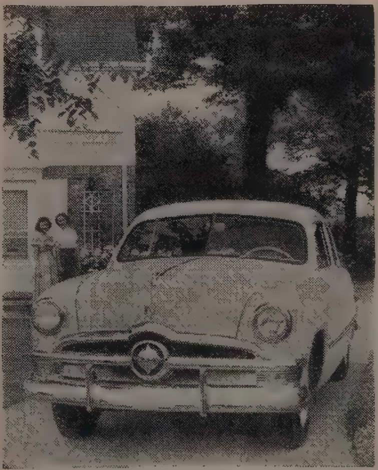
The latest count of passenger cars in use by year model was for July 1, 1948; it showed that there were 12,439,000 units ten



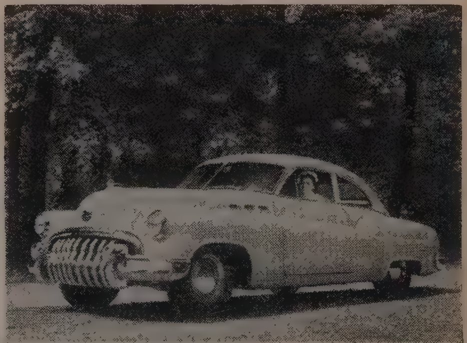
Above: THE 1950 STUDEBAKER Land Cruiser

Below: THE HUDSON PACEMAKER, a new entry in the lower-priced field, shown in late 1949



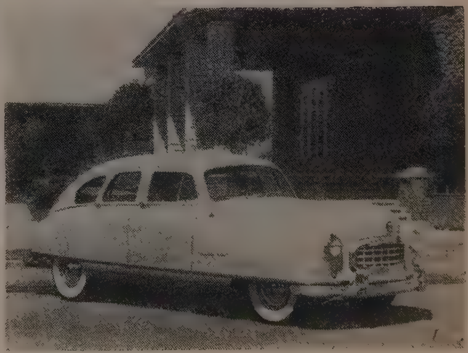


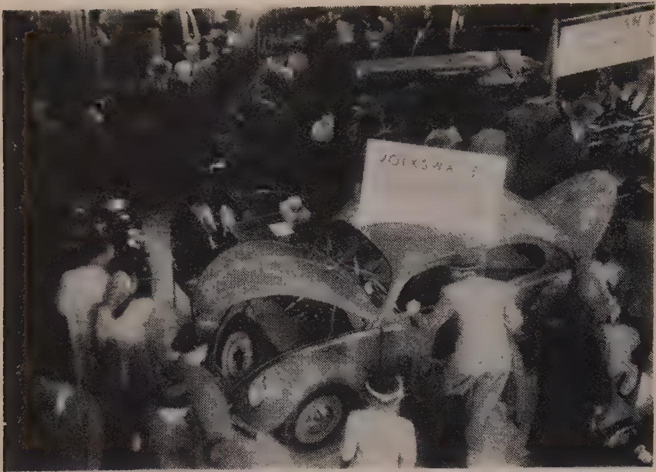
Above: THE 1950 FORD Deluxe Tudor sedan



Above: THE BUICK SPECIAL, a new addition to the Buick line introduced in 1949

Below: THE 1950 NASH Ambassador Airflyte





THE *VOLKSWAGEN* or "People's Car," long promised the German people by Hitler, was at last in production in 1949 at the rate of more than 3,000 a month. One of them is shown here on exhibit in New York city

years or more of age, representing 41.9% of the total count of 29,968,000. It was expected that the July 1, 1949, count would show only a slightly reduced percentage of cars ten years or older as compared to 1948. Another tabulation made by the R. L. Polk and Co. as of July 1, 1948, covering motor trucks, showed a total of 2,251,000 units ten years or older, comprising 34.5% of the total of 6,605,000 vehicles registered on that date. As in the case of passenger cars, the percentage of vehicles ten years or older on July 1, 1949, was expected to be only slightly smaller than the 34.5% shown in 1948. The prewar average age of passenger cars was approximately 5.6 years, and the motor truck average age in the 1940 and 1941 period was 5.7 years. The peak average age of motor vehicles in use occurred in 1946—9.0 years for passenger cars and 8.6 years for motor trucks. In 1941 the R. L. Polk and Co. count showed that 17% of the passenger cars registered were ten years or more of age, and motor trucks ten years or older comprised 18% of total registrations.

From the end of World War II through Dec. 1949 the cumulative total number of passenger cars produced in plants in the United States was 14,805,590, and the aggregate total for motor trucks and buses was 4,833,524.

Prices and Imports.—U.S. motor vehicle prices appeared to have reached a peak level in 1949, and there were several decreases in prices as shown by the index in several months during the year; but the net gain up to Nov. 1949 was 6.4%, compared with the 1948 average for passenger cars, while the motor truck wholesale price index for November was the same as the 1948 average, according to the U.S. bureau of labour statistics. Compared with Dec. 1941, the average wholesale price for passenger cars reflected an increase of 58%, while that of motor trucks showed a gain of 54.3%. The weighted average wholesale price index for passenger cars and trucks combined reflected a gain of 57.2% over the Dec. 1941 base. Most used car prices continued on the downward trend.

Imports of motor vehicles into the United States during the first ten months of 1949 were 5,493 passenger cars and 462 motor trucks; 5,353 of the passenger cars and 367 of the trucks were imported from the United Kingdom. In the full year 1948, imports of passenger cars were 28,047, and trucks, 684; nearly all were from the United Kingdom.

Table VII.—*Registrations of Motor Vehicles in the United States*

Dec. 31	Passenger cars	Buses	Trucks	Total
1940	27,372,397	72,641	4,590,386	32,035,424
1941	29,524,101	88,800	4,859,244	34,472,145
1942	27,868,746	102,093	4,608,086	32,578,925
1943	25,912,730	106,702	4,480,176	30,499,608
1944	25,466,331	106,518	4,513,340	30,086,189
1945	25,691,434	112,253	4,834,742	30,638,429
1946	28,100,188	119,937	5,725,692	33,945,817
1947	30,718,852	128,983	6,512,628	37,360,463
1948	33,261,454	133,430	7,227,380	40,622,264
1949	35,491,000	7,807,000		43,298,000

Source: U.S. Bureau of Public Roads.

Canada.—Shipments of motor vehicles from plants located in Canada during the first 11 months of 1949 were 173,927 passenger cars and 90,786 trucks, or an increase of 17% for passenger cars and 2% for trucks, compared with 1948. Exports of motor vehicles from Canada during the first 11 months of 1949 decreased considerably under the same period of the previous year. Also, the proportion of total shipments exported dropped from 17.9% for passenger cars in 1948 to 8.9% in 1949, while the proportion of motor trucks exported dropped from 24.3% in 1948 to 13.5% in 1949. The proportion of total output of motor vehicles in Canada that was exported in 1949 was considerably greater, however, than the proportion exported from U.S. plants; but the proportion of output going to foreign markets from Canadian plants was far below the proportion exported by Great Britain and France.

Great Britain.—Motor vehicle production in Great Britain during the first ten months of 1949 continued the postwar upward trend, with an increase of 19% in passenger cars and 23% in motor trucks over the same period in 1948. Exports likewise continued the postwar upward trend in 1949, as shown in Table VIII, but the proportion of production exported dropped somewhat below that of 1948. In 1949, 64.7% of passenger cars were exported, and 47.5% of motor trucks, or a combined total of 58.6% of total production. In 1948, 71.3% of passenger cars were exported, while 48.4% of motor trucks, or a combined total of 63.5% of motor vehicles built, were exported. Motor truck production in 1949 established a new high mark.

Table VIII.—*Motor Vehicle Production and Exports in Great Britain*

Production	Passenger cars	Commercial vehicles	Total
First 10 months 1949.	333,832	176,474	510,306
First 10 months 1948	280,664	143,907	424,571
First 10 months 1947.	238,365	124,801	363,166
First 10 months 1946.	166,311	113,310	279,621
Exports			
First 10 months 1949.	215,743	83,781	299,524
First 10 months 1948.	200,076	69,702	269,778
First 10 months 1947.	124,341	39,354	163,695
First 10 months 1946.	76,221	39,598	115,819
Per Cent Exported			
First 10 months 1949.	64.7	47.5	58.6
First 10 months 1948	71.3	48.4	63.5
First 10 months 1947.	52.1	31.5	45.0
First 10 months 1946.	45.9	35.0	41.5

Germany.—Production of passenger cars in the first nine months of 1949 was 67,350 units, and motor truck and bus output reached 49,050, according to the Dec. 15, 1949, issue of *L'Argus*, compared with 17,878 passenger cars and 17,417 trucks in the first nine month of 1948, for western Germany. (*See* also MOTOR TRANSPORTATION.) (O. P. P.)

Automobile Insurance: *see* INSURANCE.

Automobile Racing.

Bill Holland of Reading, Pa., after being second to Mauri Rose of South Bend, Ind., two straight years, roared over the finish line in record-breaking time to capture the 500-mi. Memorial day classic at Indianapolis speedway in 1949. Driving his Blue Crown Special at an average speed of 121.327 mi. per hour, Holland was clocked in 4 hr. 7 min. 15.97 sec. The previous average mark of 119.813 m.p.h. was set by Rose in 1948.

A crowd of 175,000 cheered Holland, who had been locked in a close contest with Rose until Rose was forced out by engine trouble on the 190th lap.

Second place was taken by Johnny Parsons, Van Nuys, Calif., winner of the American Automobile association point championship for 1949. George Connor, Speedway City, Ind., was third and Myron Fohr, Milwaukee, Wis., fourth.

A number of crashes marked the trials and the final, Duke Nalon cheating death on the 24th lap when a wheel tore loose and his Novi Mibil Special burst into flames as it struck a wall. Nalon had set a first-lap record of 126.564 m.p.h. and had accumulated $2,300 in prize money. The former high of 123.02 m.p.h. had been established by Rex Mays, Glendale, Calif., the year before. Mays, a veteran star, met death on Nov. 6, at Del Mar, Calif., when his car struck a hole and threw him into the path of another racer.

Alex Xydias, Burbank, Calif., set a world record of 153 m.p.h. in the first annual speed meet for American stock power motor cars at Bonneville Salt Flats, Utah. Xydias held the previous mark of 138.74 m.p.h. (T. V. H.)

Aviation, Civil.

Most branches of aviation experienced substantial improvement in 1949. The air lines in general reported their greatest peacetime activity and profits, the manufacturing industry continued to improve its financial position and personal aviation established a stronger foothold in the agricultural and industrial markets.

Scheduled Air Transport.—Scheduled air lines of the world, exclusive of the U.S.S.R., operated about 3,800 aircraft of all types at the end of 1949. Approximately three-fourths of all these transports were of U.S. manufacture. Aircraft produced in the United States carried about 90% of the world's scheduled air traffic. Principal U.S. air-line transport types in production at the year end were the four-motored Boeing Stratocruiser, the Lockheed Constellation, the Douglas DC-6 and the twin-motored Consolidated Vultee 240 and Martin 2-O-2.

Table I.—*U.S. Scheduled Air Carrier Operations*

(Calendar year)

	1948	1949 (CAA estimate)
Revenue passengers carried—Total	14,540,951	16,500,000
Domestic	13,168,095	15,000,000
International	1,372,856	1,500,000
Revenue miles flown—Total	436,270,224	459,691,000
Domestic	338,216,783	352,384,000
International	98,053,441	107,307,000
Revenue passenger-miles flown (000)—Total	7,852,177	8,800,000
Domestic	5,963,180	6,700,000
International	1,888,997	2,100,000
Passenger-miles flown (000)—Total	8,189,726	9,218,000
Domestic	6,227,932	7,012,000
International	1,961,794	2,206,000
Ton-miles of express carried—Total	71,497,167	80,233,000
Domestic	30,092,833	26,469,000
International	41,404,334	53,764,000
Ton-miles of freight carried—Total	75,472,194	106,095,000
Domestic	71,283,727	97,724,000
International	4,188,467	8,371,000

Throughout the world the DC-3s and DC-4s, largely war surplus equipment, were still the main work horses of the air lines, but in the United States air carriers were fast changing over to the more efficient postwar types of equipment. American Airlines, Inc., for example, retired the last of its prewar planes from passenger service during the first half of the year and by December was operating with 50 DC-6s and 74 Convairs.

Scheduled American air carriers operated 1,083 planes on both domestic and international services by the end of 1949, and carried close to two-thirds of the world's air traffic. The year 1949 was the biggest the air lines of the United States had experienced to date. An estimated 16,500,000 passengers were carried a total of 8,800,000,000 passenger-mi., representing about a 12% increase over 1948. Scheduled U.S. domestic and international air lines employed 78,500 persons in the fall of 1949 and provided service to 705 U.S. cities, as well as their overseas points of call. It was estimated that the domestic lines were carrying 43% of the first-class rail and air travel market in the U.S. in 1949 as against 39% in 1948 and only 13% in 1945.

The year 1949 witnessed the introduction of air coach travel on a wide scale. Irregular carriers, operating under exemption permits from the Civil Aeronautics board, had proved that lower fares and less emphasis on the usual air travel luxuries would attract many new passengers to air travel, and one by one the major certificated air lines entered the coach field. Pan American World Airways' coach-type service between Puerto Rico and New York, inaugurated in the latter part of 1948, proved very popular during 1949 and the record disclosed little diversion of first-class passengers to the new coach service. Capital Airlines' initial coach service between New York and

THE BRITISH DE HAVILLAND COMET (left), world's first jet-driven air liner being readied for its maiden flight in 1949. Designed for express runs on Commonwealth and intercontinental routes, the plane had a speed approaching 500 m.p.h. and was expected to be in service in 1952

Table II.—*U.S. Scheduled Air Carrier Operating Revenues and Income*

(Calendar year)	1948	1949
Revenues:		
Domestic trunk air lines	$413,353,000	$460,000,000
International air lines	249,234,000	283,000,000
Feeder air lines	16,292,000	21,000,000
Total revenues	$678,879,000	$764,000,000
Income:		
Domestic trunk air lines	$ 2,075,000	$25,800,000
International air lines	13,947,000	20,000,000
Feeder air lines	369,000	(1,000,000)*
Total income	$ 16,391,000	$44,800,000

*Loss.

Chicago was an immediate success and by the last week of Dec. 1949 both American Airlines and T.W.A. (Transcontinental & Western Air) had begun low cost ($110) transcontinental coach service between New York and California. Many regarded the widespread introduction of coach service during 1949 as a significant step toward ushering in an era of mass air travel.

Substantial improvement in passenger and cargo traffic, increased mail pay and a reduction in unit operating costs through the installation of new postwar equipment and more efficient operations, combined to produce the best revenue period since World War II for U.S. carriers. Gross revenues increased about 13% over 1948, according to Air Transport association estimates, totalling $764,000,000 in 1949, as compared with $678,879,000 in 1948. Gross operating expenses were estimated at $720,000,000 as against $662,558,000 in 1948, resulting in a major increase in net operating income to more than $44,000,000 for 1949—an impressive improvement for an industry which was operating heavily in the red only three years before. Of the total 1949 revenues, passenger traffic contributed about 72%; mail 18%; with freight, express, excess baggage and other services making up the remaining 10%.

While the 14 feeder air lines experienced substantial increases in all categories of traffic except mail during 1949, most of them were too new to be out of their initial developmental period. E. W. Wiggins Airways, for example, operating in New England, and Central Airlines in Texas and Oklahoma, did not begin operations until Sept. 1949. Helicopter Air Service, serving the Chicago area, commenced operations Aug. 20, 1949. It was the second helicopter mail service to be started, following Los Angeles Airways, which began in May 1947. The Civil Aeronautics board finally awarded five-year temporary all-cargo operating certificates in Aug. 1949 to Slick Airways, Flying Tigers and U.S. Airlines, culminating a three and one-half year battle for recognition on the part of these "irregulars" against determined opposition from the major certificated carriers.

Safety Record.—In spite of four unfortunate accidents in the last half of the year, U.S. scheduled air lines set a new safety record in 1949, operating domestically and on routes around the globe at an over-all average rate of 1.0 passenger fatality per 100,000,000 passenger-mi. On international routes U.S. carriers had a perfect safety record, flying 2,100,000,000 passenger-mi. during the year. On domestic routes, the safety record was the same as in 1948; namely, 1.3 fatalities per 100,000,000 passenger-mi.—but the air lines flew more than 1,000,000,000 more passenger-miles than during the year before; this was the equivalent of 3,000 trips around the earth at the equator for each of the 93 passenger fatalities. Two of the accidents during the year were caused by nontransport craft colliding with regular air liners. (*See* also DISASTERS.)

Other U.S. Civil Aviation Activities.—There were an estimated 510,000 certificated pilots in the United States at year's end, as against 491,306 the preceding year. Of these, 9,678 were women pilots. About 1,800 women were rated as air traffic control operators, about one-fifth of the total in that specialty. The number of new student and private pilot certificates issued showed a sharp decrease. Partly because of a revision of its records, the Civil Aeronautics administration reported a decrease in the number of civil aircraft registered, to 92,700 at the end of the year. The number of airports in operation remained about 6,100.

As a result of the growing use of landing and air navigation aids installed on the federal airways by the CAA, the air lines continued to increase the regularity of their scheduled operations without reducing safety standards. Instrument landing systems were in daily use at 87 points in the continental U.S. and at 2 points in Alaska. Static-free very high frequency radio ranges were installed at 370 points by the end of the year. Under the Federal Aid Airport program, the CAA made grants totalling about $99,000,000 for improvements at 783 different airports. (*See* also AIRPORTS AND FLYING FIELDS; CIVIL AERONAUTICS ADMINISTRATION.)

Meanwhile, the Civil Aeronautics board was wrestling with approximately 1,100 undecided proceedings which had piled up on its calendar, including new route applications, proposed mergers, interchange agreements, foreign permits, mail rate decisions and other matters importantly affecting the economic future of the air-line industry.

Other Western Hemisphere Activities.—Trans-Canada Air Lines handled a record volume of traffic on its domestic and overseas routes in 1949, carrying more than 690,000 passengers, an increase of 23% over 1948. Air cargo and air express were up 55%, totalling more than 3,600,000 ton-mi. Mail was almost double the 1948 total, exceeding 3,900,000 ton-mi. Financial results were not reported, but in 1948 T.C.A. showed a loss of about $3,000,000, 60% of which was on its overseas services across the Atlantic and to the Caribbean, and 40% on domestic operations. The route from Montreal, Que., to Bermuda and Trinidad was flown once a week with Canadair Fours. On Dec. 1, 1949, it was extended to Barbados.

Canadian Pacific Air Lines, which at first had been refused permission to operate international services, and then had been awarded the transpacific route, had negotiations under way at the close of the year to extend its services beyond Australia to Auckland, N.Z. Altogether, there were eight private carriers in Canada authorized to operate scheduled services, three of which were reported to have shown profits. In addition, there were about 150 private operators whose gross revenues exceeded $10,000 a year.

Four Canadian aircraft manufacturing companies produced civil aircraft during 1949: the Canadian Car and Foundry company produced the Norseman; the de Havillands, the Chipmunk and the Beaver; Canadair Ltd., the Four; and A. V. Roe Canada, Ltd., the Avro C.102 Jetliner. The last named was the first jet-powered civil transport to fly in the western hemisphere.

In Argentina one of the most imposing airports in the world, the Pistarini International airport located 15 mi. from Buenos Aires, was opened to traffic on Oct. 27, 1949. The four Argentine air lines, however, had reported heavy losses ever since the government took them over a few years before. Fama, the principal international air line, which had been expected to commence operations between Buenos Aires and New York in 1949,

Table III.—*Selected Statistics for U.S. Civil Aviation*

(Calendar year)	1948	1949 (CAA estimated)
Number of certificated pilots	491,306*	510,000
Number of student pilot permits issued	117,725	45,000
Number of private pilot certificates issued	86,838	30,000
Number of commercial pilot certificates issued	8,151	7,300
Number of air-line transport pilot certificates issued	1,110	1,000
Number of U.S. civil aircraft	96,000	92,700
Number of four-engine civil transports	433	455
Number of two-engine civil transports	604	610
Number of civil airports	6,016	6,100

*As of May 1, 1948.

Table IV.—*Selected Statistics of Aviation in Canada*

	Aug. 31, 1946	Aug. 31, 1949
Airports licensed	134	376
Aircraft licensed—private	40	634
Aircraft licensed—commercial	708	1,469
Pilot licences—private	828	2,324
Pilot licences—limited commercial	1,214	873
Pilot licences—commercial	108	78
Pilot licences—transport	778	853
Air traffic controller licences	93	136
Air engineer licences	1,175	1,604

was planning to do so during 1950.

In Brazil, Panair do Brasil maintained four round trips a week to Europe, Africa and the middle east with Constellations. Together with Cruzeiro do Sul it operated seven round trips weekly to Uruguay, Argentina and Paraguay. These two carriers and Aerovias Brasil accounted for more than three-fourths of Brazil's air-line traffic.

At La Paz, Bol., which boasts the highest airport in the world (altitude 13,398 ft.), Braniff Airways operated DC-4s using jet-assisted take-off (Jato) and Panagra was planning to extend similar Jato DC-4 operations into other high-altitude airports along the Andean chain, notably at Cochabamba, Bol., and Arequipa, Peru.

Pan American World Airways' Latin American division reported a record year for 1949, carrying 709,000 revenue passengers a total of 586,000,000 passenger-mi., compared with 683,600 passengers and 548,000,000 passenger-mi. in 1948. Cargo totalled 16,650 tons in 1949, compared with 14,620 tons the preceding year. The Latin American division completed four and one-half years of accident-free operation as of Dec. 31, 1949, during which about 2,500,000,000 passenger-mi. were flown without injury to passengers or crew. (*See* also AIRCRAFT MANUFACTURE; AVIATION, MILITARY; CIVIL AERONAUTICS ADMINISTRATION; JET PROPULSION; PETROLEUM; POST OFFICE.)

(J. P. V. Z.)

Great Britain and Europe.—Relatively little expansion occurred in European air transport during 1949. There were few new services; and few new types of aircraft were put into service but business on the air lines generally improved. The Dutch and the Belgian lines (K.L.M. and Sabena) had a surplus on operations in 1948. Sabena appeared to have made a profit on the work in 1949. K.L.M. had its line to the east closed for two months and diverted for another five months by the closing of Pakistan to its aircraft, and, like the other major operators, showed a loss on the year. Yet almost without exception the European air lines were busier than they had been in 1948. As compared with 1948, passengers were more by 35% and aircraft movements were more than double. At London airport aircraft movements rose from 1,145 in Dec. 1948 to 2,423 in July 1949 and at Northolt, in the same months, the rise was from 1,319 to 4,565. These figures marked the peak of the holiday season but they also marked a large increase over the corresponding period of 1948.

The general rise in the volume of traffic in 1949 seems to have amounted to about 30%.

Competition for the improved traffic remained as keen as ever and was no doubt responsible for the failure in the early part of the year of an Anglo-American attempt to introduce the full freedom of the air for the whole of Europe outside the Russian-controlled areas. The proposal, sponsored by the United Kingdom and the United States, that the existing bilateral air agreements (giving reciprocal rights of operation) should be replaced by multilateral agreements (giving general freedom to operate commercial services) was rejected by a regional conference of the International Civil Aviation organization held at Geneva, Switz.

Authority to operate international services had, therefore, still to be sought by individual negotiation and countries were still inclined to make their air agreements depend on the conclusion of satisfactory bargains. This was beginning to be modified by pooling arrangements on certain routes. The United Kingdom had a pooling agreement with France before World War II on the route between London and Paris. A similar arrangement was reported in 1949 between K.L.M., Scandinavian Airlines system, the Czech line and one of the Italian companies on certain common routes. The precise terms of these agreements were not disclosed but their effect was expected to restrict some forms of competition as well as lead to some measure of co-operation.

Passenger fares, agreed upon by operators through their established International Air Transport association, remained steady at an average of $7\frac{1}{2}$*d.* a mile on European routes. Throughout the year there was some pressure toward lowering freight rates and toward introducing lower passenger rates on nonregular services. Indirect competition by British charter companies, which were forbidden to operate regular services, had been checked partially by allowing a number of them to become "associates" of British European airways, operating particular services under agreements specifying frequencies and fares. With the return of aircraft from the Berlin air lift, there was a renewal of the movement toward cheaper fares. One charter company, operating Tudor II and Tudor V aircraft, offered them at rates which, if all seats were filled, would represent 2*d.* to 3*d.* a passenger-mile. As the overheads of air line com-

WILLIAM ODOM'S MONOPLANE taxiing to a halt at Teterboro, N.J., March 8, 1949, after flying 5,300 mi. from Honolulu, T.H., a long-distance nonstop record for light planes. Odom was killed in an air crash Sept. 5

panies were not supposed to exceed 33% of total costs, this seemed to argue that fares should not be so high as 7½*d.* a mile even if air-line companies assumed that, on the average, they could not expect to fill more than 60% of their aircraft capacity.

The two British corporations—British Overseas Airways and British European Airways—were engaged during 1949 in reorganizations designed to reduce overheads and to diminish the losses on their operations. In the middle of the year the smaller, third corporation, British South American Airways, was amalgamated with B.O.A.C. This was a direct result of the ban put on passenger-carrying in Tudor I and Tudor IV aircraft after two had been lost inexplicably over the Atlantic. This left B.S.A.A. with an inadequate fleet and with no prospect of acquiring quickly other types of suitable aircraft. B.O.A.C. on the other hand had good aircraft prospects. Not only had it six Stratocruisers on order but it had succeeded in acquiring from Scandinavian Airlines system the right to four more which were on order for that company. It had also taken over from the Irish company 4 additional Constellations; and it was expecting delivery of 22 Canadair Argonauts and 25 Hermes IVs. The deliveries of the Hermes IVs and the Stratocruisers were much delayed and B.O.A.C. was somewhat handicapped both in handling its own business and in providing for the services which B.S.A.A. had intended to operate.

British European Airways, equipped chiefly with Viking aircraft, had fully recovered from its early difficulties with this type and did good business during 1949. In the preceding financial year its losses were about £2,250,000. Improved traffic, combined with more economical management and maintenance, gave a much better outlook for the financial year ending in March 1950. The signs were that the deficit would be reduced by about £1,000,000. B.O.A.C., which lost £5,250,000 in 1948–49, had not begun to feel the benefit of its new aircraft and was not expecting to show large additional savings on the year 1949–50. This corporation had already made notable economies in administration and reduced its deficit by nearly £2,000,000 in the course of the previous financial year.

To fill capacity was the chief difficulty of air operators in a period of high fares and many competitors. Evidence of the competition was to be found in the fact that 17 international air companies used London airport regularly during 1949, although the daily passenger totals at that airport varied only between 600 and 1,000 and the daily freight loads between 20 and 25 tons. Standards of operation and the quality of the aircraft in use were becoming important factors in securing traffic as well as in economical running. During 1949 the first signs appeared of a probable British advantage on the air lines serving Europe. These arose from the successful application of the gas turbine to the needs of commercial air transport.

In all other countries except Canada, the gas turbine, at the stage of development it had reached in 1949, had been considered unsuitable for commercial operation, largely because of its high rate of fuel consumption. In the face of that prejudice, British and Canadian constructors had proceeded with the preparation of air liners using gas turbines both as the motive power for driving airscrews and as the means of providing jet propulsion. The disadvantage in fuel consumption per horsepower-hour or per pound-thrust was admitted but a counterargument based on cost per passenger-mile or on the probable return on capital invested was advanced by the aircraft manufacturers. Proof that this argument must be taken seriously was contained in the interest shown by United States operators when the first batch of gas turbine aircraft was exhibited during 1949. There were four liners of various sizes using gas turbines to turn their airscrews. These were the Vickers Viscount 40- to 53-seater, the Armstrong Whitworth Apollo 26- to 41-seater, the Handley Page Hermes V 48- to 74-seater and the Miles Marathon 16- to 20-seater. One jet liner, the de Havilland Comet 36-seater appeared in England and one, the Avro Jetliner 36- to 40-seater, in Canada. The designer of the Viscount produced figures to show that it could be operated as cheaply per passenger-mile, up to a maximum practical range of 900 mi., as a comparable piston-engine liner. These figures had yet to be tested in conditions of regular service, but early experience with liners of this type suggested that an additional economic advantage might be derived from the smooth running and relative absence of vibration in the rotary engine which is responsible for a large part of the cost of airframe and instrument maintenance. This fact impressed air-line operators, first because of its probable attractiveness to passengers and also because of other economic implications. These aircraft did not offer high speeds. They were likely to cruise at speeds between 270 and 330 mi. per hour but they did appear to offer new standards of passenger comfort.

The one new liner which promised high speed was the Comet. A number of its long-range test flights were made at a speed of about 500 mi. per hour. To obtain this speed it flew at heights between 36,000 ft. and 40,000 ft. If operators should decide to fly it at a lower level, the cruising speed might be 450 mi. per hour or less. Its value on a highly competitive route like that between Europe and America was so obvious that the appearance of the first Comet caused a stir among operators and aircraft manufacturers alike in the United States. Sixteen Comets were ordered, 14 of them for use by British Overseas Airways.

About 40 Viscount turboprop liners were also ordered for use by the two corporations and these also were thought likely to go into service in 1953. There were also indications that B.O.A.C. expected good results from the 140-ton flying-boats which were being built by Saunders-Roe. This type too would use gas turbines to turn its airscrews and was expected to cruise at 380 mi. per hour.

The commercial version of the Bristol Brabazon seemed likely to appear two years later.

There was little news of developments in the U.S.S.R. A big network of air services was still being operated inside the country but few outside, and there was no information of new air liners. (E. C. SD.)

Aviation, Military.

United States Air Force.—Operation "Vittles," until the lifting of the rail and road blockade of Berlin, Germany, on May 12 by the Russians, was a major U.S. air force activity during 1949. The Berlin air lift had begun operations on June 26, 1948, by flying, in a 24-hr. period, 80 tons of food and other needed supplies into Berlin. The planes during the first days of the project were two-engined C-47s. The amount of supplies flown by air was greatly increased by the addition of four-engined C-54 transports and by May 12, 1949, a total of 195,998 flights had been made by U.S. and British transports, carrying 1,589,567 cargo and passenger tons. With the announcement of the lifting of the rail and road blockade, the combined air lift was gradually inactivated as part of a plan to reduce the scope of operations. This phasing out continued until Sept. 30, the closing day of the Berlin air lift. During its 15 months of operation, U.S. planes had massed a total of 591,347 flying hours and U.S. air lift planes, including navy transports, carried 1,783,826 tons of food, coal and other supplies into Berlin. British planes on the air lift had flown 538,416 tons through the air corridors to Berlin in addition to the U.S. tonnage.

Production of the Consolidated B-36 long-range bomber continued during 1949 and it was announced that a second U.S.A.F. operational group was equipped with the B-36 by June 30. Four

J-47 jet engines were installed on a B-36D, giving more than 20,000 additional pounds of thrust to the 21,000 h.p. supplied by the six Wasp-Major engines with which the pusher-type bomber was equipped. Jet engines were being added to all existing B-36s.

The nonstop around-the-world flight of an air force B-50 bomber, the "Lucky Lady II," Feb. 26 to March 2, 1949, demonstrated progress in increasing the range of aircraft by inflight refuelling and fuel conservation by cruise control techniques. The B-50 left Carswell air force base, Fort Worth, Tex., Feb. 26, headed east and landed at the take-off point after being aloft 94 hr. 1 min. B-29 tanker planes refuelled the "Lucky Lady II" by a flexible-hose gravity-feed system at four points along its global route of more than 23,000 mi.

The Boeing B-47 Stratojet, a high-speed medium bomber powered by six jet engines, established a record flight for bombers by flying from Moses Lake, Wash., to Andrews field, Camp Springs, Md., on Feb. 8, 1949, in 3 hr. 46 min. The 125,000-lb. bomber, accepted by the air force late in 1948, utilized a new type landing gear with wheels mounted in tandem or bicycle fashion.

Four new jet fighter planes were among the new aircraft to be test flown during the year. One of these, the XF-92A, formerly designated the Model 7002 research plane, was a radically designed fighter using the Delta wing for the first time. Experimentation and evaluation of the aerodynamic characteristics of the Delta wing, which has a sweepback of 60°, had previously been conducted in wind tunnel tests.

The Republic XF-91, interceptor, and the Lockheed XF-90, penetration fighter, made initial flights at Muroc air force base, Calif. Flight evaluation of the XF-94, a radar-equipped advanced design of the Lockheed TF-80, was also made.

Two trainer aircraft were test flown in September. The North American T-28, a single-engined low-wing monoplane, was designed to replace the T-6 Texan, which was used widely in training pilots during World War II. The T-28 included several improvements over its predecessor. The T-29, a modification of the Convair Model 240 transport, was designed to train student navigators. This flying classroom had 14 stations, each equipped with a Loran scope, radio compass, altimeter, airspeed indicator, drift meter and map table.

Other new aircraft included the XC-123, a twin-engined assault transport, and an experimental bomber, the Martin XB-51. Powered by three turbojet engines, the XB-51 was the first postwar aeroplane specifically designed for the destruction of surface targets in co-operation with ground forces. The XB-52, which was under development, was a jet long-range heavy bomber.

The total number of officers and airmen on duty in the U.S.A.F. reached 419,919 as of Aug. 31, 1949. This total represented full-time military personnel, regulars and reserves, on active duty.

As of July 1949, there were 9,400 U.S.A.F. planes in active status including postwar types. Included in this total were combat and utility aircraft.

A new distinctive blue uniform, identical for officers and airmen except for insignia of rank, was approved by the air force at the beginning of the year. All airmen were to be equipped with new uniforms by Sept. 1, 1950.

The headquarters of four numbered air forces (the 1st, 10th, 14th and 15th) and several tactical units in the United States were relocated and six tactical groups were scheduled to be inactivated in accordance with a program of economies announced in August by the department of defense. Under this plan, nine bases were declared surplus to the needs of the U.S.A.F.; and disposal, under the provisions of public law 152, 81st congress, was initiated. The group structure of the air force was reduced from 54 to 48. In Oct. 1949, the congress passed legislation authorizing a group structure of 58.

A major air force peacetime activity, Operation "Haylift," a 24-day emergency air lift to supply snowbound ranchers in the Nevada area, ended Feb. 18, 1949, after 1,879 tons of cattle feed, food rations, medical supplies and emergency medical equipment had been dropped from 27 Fairchild C-82 Packets and 10 Douglas C-47s. More than 100 U.S.A.F. personnel took part in the emergency flights.

Air Indoctrination Course II, a special exercise conducted by the U.S. air force in co-operation with the U.S. army and U.S. navy, was held at Eglin air force base, Valparaiso, Fla., beginning Oct. 11. The manoeuvres, the fourth in an annual series, were held to indoctrinate students of the various U.S. and foreign armed forces service schools and other observers in the tactics and techniques of air-ground operations. Long-range emergency air-raid defense plans were tested in a 10-state aircraft detection exercise, sponsored by the air defense command and assisted by the Office of Civil Defense Planning. The six-day exercise, known as Operation "Lookout," utilized both radar and civilian ground observers serving on a voluntary basis.

(H. S. Vg.)

United States Navy.—Reduction of the aeronautic organization of the U.S. navy to the level permitted by the national military establishment budget for fiscal 1950 began early in 1949. By July, the number of operating and support aircraft was lowered to 10,500, aviation officers to 12,205, and enlisted rates to 63,490. By the same month, 3 battle, 5 attack, 3 light, and 3 escort carriers and 14 aircraft tenders were operating with the fleet; active aviation shore stations numbered 60; overseas bases, 13.

Several Pacific bases were closed and some Atlantic bases used in World War II were reactivated.

Flight training was concentrated at Pensacola, Fla., and Corpus Christi, Tex., and technical training at Memphis, Tenn. The F8F fighter, AD attack plane, and P2V patrol plane were introduced in flight courses and jet fighters were introduced in operational training.

The organized reserve was expanded to 7,800 officers and 21,500 men. Training was conducted on a year-round basis and 15 air groups completed two-week cruises aboard carriers. Reserve squadrons of the marine corps carried out their annual summer mobilization and manoeuvres at Cherry Point, N.C., and El Toro, Calif.

In fleet operations, naval aviation literally covered the globe. The carrier "Tarawa" completed her around-the-world cruise in February. A carrier task force operated in the Mediterranean for the entire year. The escort carrier "Palau" conducted cold weather tests off New England in January, and during the summer, navy and coast guard helicopters and air force RB-17s flew aerial reconnaissance for a naval force supplying weather bureau stations in the arctic. Patrol squadrons completed aerial photographic surveys in Alaska, Labrador, Newfoundland and Central and South America. Naval and marine air covered the amphibious landings of troops in Atlantic fleet exercises in the Caribbean during the spring. In a Pacific fleet minor cold weather exercise, amphibious landings on Kodiak Island were supported by navy and marine squadrons operating from carriers against the opposition of shore-based air force and navy squadrons.

On March 4, the "Caroline Mars," one of four large seaplanes operating with fleet logistic support wings, Pacific, broke a record by carrying 263 passengers in addition to her crew of 6 from San Diego, Calif., to Alameda, Calif. The same month, a P2V-3C patrol plane with a 10,000-lb. bomb load took off from the carrier "Coral Sea" in the Atlantic, flew across the United States to drop its bomb load and returned nonstop to Patuxent river, Md., after a flight of more than 4,000 mi.

Naval planes assisted the air force in Operation "Haylift" during February, dropping 1,100 tons of hay to snowbound cattle on the western range. In support of the Berlin air lift, Operation "Vittles," aircraft and engines were overhauled and repaired, GCA crews and equipment were transferred, and transport squadrons redeployed. Navy squadrons VR-6 and 8 participated in the air lift from Nov. 1948 to June 1949. VR-8 not only carried the most tons in any month, but with VR-6 a close second led all air force and navy squadrons in the efficient use of aircraft over the entire period.

The former seaplane tender "Norton Sound," placed in operation early in the year as a test ship, aided in solving many launching and directing problems in the field of guided missiles. Wind tunnel facilities and equipment were improved. Research in turbojet engines increased performance. The jet fighters F2H Banshee, F9F Panther, and F6U Pirate and the conventional attack planes AD-3 Skyraider and AM-1 Mauler, which was capable of carrying a heavier bomb load than any known single-engined plane, were operating with the fleet. Helicopters had replaced single-engined seaplanes on battleships and cruisers. Work was begun on the modernization of three carriers and installation of more powerful deck gear for the operation of larger aircraft. (*See* also NAVIES OF THE WORLD.)

(C. T. D.)

Air Forces of the World.—The outstanding development of the year 1949 was the formal ratification through the North Atlantic treaty (*q.v.*) of the policy through which England was already furnishing jet fighters and engines to nations of the western European union and their democratic neighbours, under the Brussels treaty of 1948. Nations which signed the Atlantic pact of March 1949, or were in sympathy with its purposes, had already begun to equip their air forces with British Vampire and Meteor fighters. British jet engines were also available to them.

France purchased British fighters and was beginning to manufacture British jet engines under licence. Belgium purchased Meteors and Meteor trainers, and the Rolls-Royce Derwent turbojets for these were being built at Liége under licence. About 20 Meteors were purchased by the Netherlands, where the Meteor trainer was also in use. Netherlands' naval aviation was using the British Hawker Sea Fury and the Fairey Firefly among its piston-engined aircraft.

Switzerland purchased 75 Vampires and was licensed to build 100 more, with Goblin engines to be sent from England. Both Norway and Sweden purchased Vampires, and Sweden was manufacturing the de Havilland Vampire and the Goblin turbojet under licence. Italy ordered 50 Vampires in 1949, to be delivered by March 1950.

Under the Atlantic pact, United States financial aid had much to do with such purchasing of British equipment. The formalizing of the western European union defense plan included the establishment of a central supply and resources board under the Western European Union Defense committee. According to British interpretations, the excellence and availability of British jet fighters and jet engines, plus the fact that they were already being purchased, made their use in western Europe natural. British sources noted at the same time that the western hemisphere would tend to use U.S. equipment.

The U.S. was responsible under the Atlantic pact for long-range strategic-bombing requirements, on the basis of existing equipment. England's Lancasters and Lincolns, and the coastal-defense Shackleton, were limited in range, though England's position in this respect might be improved by the acquisition of B-29s which were stationed in England. The existing plan called for short-range attack bombing and fighter defense by England, France and the other pact nations. This was being pursued at the end of 1949 to such an extent that the pact nations were receiving fighters from England while R.A.F. reserves and overseas units were still using a great deal of wartime reciprocating-engine powered equipment.

U.S.S.R.—The main sources of information regarding aeronautical progress in the U.S.S.R. were reports of observers of soviet aircraft on the traditional May day and Aviation day displays, the latter of which was in July 1949. No close-up inspection of aircraft was allowed. Visitors had to be content with what they could see as the machines flew overhead.

Because of the variety of types that had been observed on such occasions there was no question but that the Russians were exploiting their knowledge of jet aircraft and jet engines to the limit. In this they were unquestionably aided by large numbers of Germans who were picked up in soviet areas in Germany and who had been at work for the Russian government during the past five years.

It was known that the Russians had been heavily occupied with the development of the guided-missiles projects based on German wartime research. This lent weight to speculation that development of liquid-fuel rocket engines on a considerable scale was under way, both for piloted aircraft and for guided missiles.

The Russians claimed to have flown an experimental jet-powered aeroplane at speeds greater than the speed of sound. There was, however, no proof of this accomplishment.

In the bomber categories, only two new types were definitely identified, the Ilyushin four-jet bomber and the Tupolev twin-jet attack bomber. They appeared to be in the medium bomber category. The best guess was that the range of the Ilyushin four-jet bomber was approximately 1,500 mi. with a bomb load of about 5,000 lb. It was thought that the Tupolev twin-jet bomber might be capable of carrying a 5,000 lb. bomb load somewhat less than 1,000 mi. and that it had a speed of at least 445 m.p.h.

In the jet-fighter category the work of only three designers had been definitely identified: Lavochkin, Mikoyan and Gurevich, and Yakovlev.

Lavochkin had a long background of design of successful single-seat fighters of conventional types. As early as 1947, an LA-9 fitted with auxiliary jet and rocket power plants was reported in the Aviation day display. Newer LAV jet designs had also been seen but details were entirely lacking.

The MIG-9 twin-jet fighter by Mikoyan was a single-seat monoplane of conventional configuration. The engines were believed to be German axial-flow type turbines developing a thrust of approximately 3,500 lb. each. Its estimated speed was of the order of 600 m.p.h.

Two Yakovlev jet fighters were described. The YAK-15 was apparently based on an earlier design (the YAK-3) in which the conventional reciprocating engine had been replaced by a JUMO 004H axial-flow turbojet engine mounted underneath the fuselage. Other dimensions and weights were lacking. The maximum speed was probably in the 500 m.p.h. range. The YAK-17 was a later development—resembling in general the Republic F-84 Thunderjet of the U.S. air force. The probability was that this machine was in the 600–650 m.p.h. class. It appeared to be the best of the 1949 U.S.S.R. fighter designs.

Reports continued of production of a Tupolev modification of the B-29 bomber. A transport modification, the TU-70, was also reported. This was a four-engined type designed for 72 passengers and a crew of 4 or 5. Ilyushin also appeared to be in production on cargo and transport types.

Above, left: THE NORTH AMERICAN F-86 SABRE, U.S.A.F. single-place, low-wing fighter

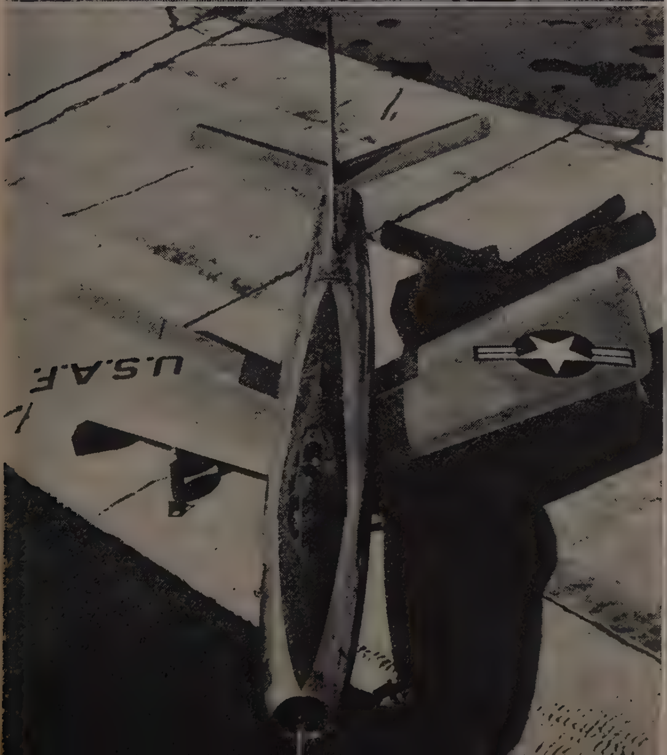
Above, right: THE CONSOLIDATED VULTEE XP5Y-1, U.S. navy flying boat, under construction in July 1949. It was designed for long search-rescue, patrol or antisubmarine missions and was to be powered by four propeller-turbine engines

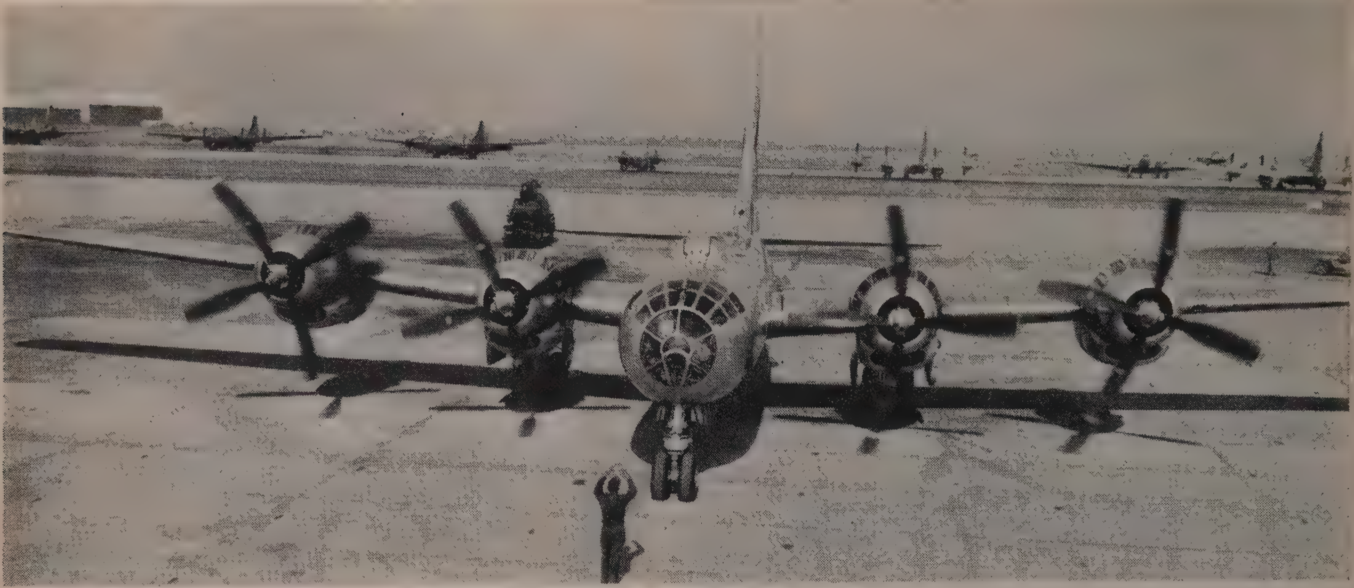
Left: THE LOCKHEED XF-90, a U.S.A.F. heavy penetration fighter, designed for high speed and long range, to enable flights deep into enemy territory. It had two turbojet engines, swept wings and a needle-nose, and was test-flown in May 1949

Below: THE BOEING B-47 STRATOJET, a U.S.A.F. bomber which in Feb. 1949 was flown 2,289 mi. from Moses Lake, Wash., to Camp Springs, Md., at an average ground speed of 607 m.p.h.; the plane had a combat radius of more than 800 mi. and could carry a bomb load in excess of 10 tons

Lower left: THE REPUBLIC XF-91, U.S.A.F. interceptor fighter powered by a turbojet engine; details of the plane were first made public in Feb. 1949

Lower right: THE McDONNELL F2H-1 BANSHEE, U.S. navy twin-jet-engined, carrier-based fighter plane





"LUCKY LADY II," U.S.A.F. B-50, landing at Fort Worth, Tex., on March 2, 1949, after the first nonstop flight around the world. The plane was in flight for 94 hr. 1 min. and was refuelled four times in mid-air

The total number of aircraft in the Russian military and civil air fleets was entirely unknown as was the 1949 rate of aircraft production. There was undoubtedly a very considerable aviation activity within the borders of the U.S.S.R. Their designers appeared to be competent and they seemed to have access to up-to-date information from their own research laboratories and from those outside the U.S.S.R. The chances were good that a large well-manned air fleet was in being, backed up by an industry of considerable capacity, but British and U.S. sources were in agreement that, as of the close of 1949, the western European union powers had a marked edge in technological development.

Great Britain.—The appropriations for the R.A.F. were increased by £34,480,000 during the year.

British Bombers.—The first British jet-propelled bomber, the English Electric A.1 Canberra, was first flown in May 1949. It was powered by two Rolls-Royce Avon turbojets mounted in nacelles in the wings.

The conventional Avro Shackleton, powered by four Rolls-Royce reciprocating Griffons with counter-rotating propellers, continued as the only British bomber developed since the war in the 100,000-lb. class. The A. V. Roe company's Avro 707, a delta-wing research fighter powered by one Rolls-Royce Derwent, was said to be part of a research program leading toward a delta-wing bomber using twin turbojets contained in the wing. Handley Page was reported to be working on a jet bomber of unconventional design, and the de Havilland company on a jet bomber which might be based upon its successful civil turbojet transport, the Comet.

British Fighters.—The Vickers Supermarine 510 was one of the experimental-fighter types to appear during the year. It was estimated to have flown at about 660 m.p.h. and to handle well at high altitudes. A Rolls-Royce Nene turbojet was the power plant. The experimental Hawker P.1052 was also powered by a Rolls-Royce Nene. The manufacturers claimed an unusually long range for it.

The de Havilland Venom F.B.1, first flown on Sept. 2, was powered by a de Havilland Ghost turbojet. Its manoeuvrability at altitude, climb and speed were favourably reported, and the Venom was known to be an all-around improvement on the Vampire.

The navy's Westland Wyvern torpedo fighter appeared as the first front-line military aeroplane to be powered by a turboprop.

While Vampires and Meteors were the standard fighters of the R.A.F., the de Havilland Hornet and Mosquito, the Hawker Tempest, the Supermarine Spitfire, and the Bristol Brigand continued among the reciprocating-engined aircraft in service for various duties as long-range fighters, night fighters, fighter bombers and light bombers.

In addition to the jet-propelled de Havilland Sea Vampire and Supermarine Attacker, the navy continued with the de Havilland Sea Hornet, Hawker Sea Fury, Supermarine Seafire, Blackburn Firebrand, and Fairey Barracuda and Firefly for carrier-based fighting, night fighting, fighter reconnaissance and strike aircraft duties.

Two new R.A.F. antisubmarine aircraft were announced late in 1949, the Blackburn Y.A.5 and the Fairey 17.

British Jets.—British gas-turbine development continued intensively during 1949, with definite trends toward increased use of axial-flow designs, and higher power in both turbojets and turboprops, and a renewed interest in afterburning as a source of additional power.

The first British rocket motor made its appearance in 1949, the de Havilland Sprite, giving a thrust of 5,000 lb. for 9 sec. The Sprite was intended for use in the assisted take-off of such aeroplanes as the de Havilland Comet.

Among the new engines were the Rolls-Royce Avon and the Rolls-Royce Tay turbojets, the Armstrong Siddeley Double Mamba, consisting of two Mamba 3s driving a single shaft, and the Napier Double Naiad, which was reported under development. Both the Mamba and the Naiad were axial-flow turboprops. The Bristol Proteus turboprop, which was expected to be flown in 1950, was to power the Bristol Brabazon II and the Saunders-Roe Princess, the giant transports. The Armstrong Siddeley Sapphire, latest of the turbojets, was reported to be a development of the Metropolitan-Vickers Beryl.

Military Transports.—The R.A.F. was using or had ordered principally the Handley Page Hastings (75,000 lb.) as a heavy transport, the Bristol 170 (40,000 lb.) and the lighter Percival Prince and Vickers Valetta during 1949. The civil jet-transport program proceeded intensively, and the possibilities of jet transports in military transportation and in bomber development were mentioned by observers. The 130-ton Brabazon I was first flown in September, and construction on the Brabazon II and the giant Saunders-Roe Princess flying boat was proceeding. These would be powered by the Bristol Proteus turboprop. The first flights of the de Havilland Comet, powered by four Ghost turbojets, were successful, and this plane was expected by British and several U.S. observers to have an excellent future. Among the turboprop civil aircraft to fly first in 1949 were the Handley Page Hermes, heaviest turboprop transport at 84,000 lb., and the Handley Page Miles Marathon, at 18,000 lb. Both the Vickers Viscount and the Armstrong-Whitworth Apollo underwent considerable flight testing in 1949.

Helicopters.—The Westland-Sikorsky S-51 was the only helicopter reported in quantity production for military purposes, a number having been ordered by the royal navy.

France.—The French air force in 1949 was still equipped largely with surplus aircraft of World War II, except for a few British de Havilland Vampire jet fighters. Modernizing was discussed and reported upon, but action was slow. Purchases abroad were expected to provide most new types, such as jet fighters, but in the fall there was another election, with changes in the defense ministry, and a new plan was reported late in the year which would involve a considerable overhauling of the aircraft industry.

French Jets.—The outstanding French jet plane of 1949 was the Leduc 0.10 ram-jet research plane, which made its first powered flight on April 21. This plane had left the ground only on the back of a Languedoc 161 air liner, but it might be fitted with rockets for take-off power. The Leduc ram-jet engine propelled it at more than 450 m.p.h. at half power on its first powered flight.

The Dassault MD 450 Ouragan fighter, powered by a Rolls-Royce Nene turbojet built by Hispano Suiza in France under licence, appeared to be the choice under the new plan as the standard French interceptor fighter.

The SNCA de Sud-Ouest S.O. 6020 Nene-powered fighter would probably be built to the number of several hundred as all-weather fighters under the new plan.

Experimental jets of the SNCA du Nord were the Nord 1600 and the Nord 2200. The latter was designed as a carrier-borne fighter.

The Arsenal V.G. 90, also designed as a carrier-based fighter, was expected to fly late in 1949. The Bréguet 96-0, under construction, was another naval strike fighter, with a Nene turbojet in the rear and a Mamba turboprop in the nose. Among jet bombers under development were the SNCA de Sud-Ouest S.O. 4000 and the SNCA du Centre N.C. 270. Both were twin-jet designs.

Apparently no heavy bombers and heavy transports were included in the French military procurement program, and relatively few naval aircraft were included. British Supermarine Attacker naval fighters would supply this need for the present, and the development program called for work on a carrier-based torpedo bomber and a long-range seaplane.

French Engines.—The jet engines used in military aeroplanes in France were British, either imported or manufactured under licence. French development of the gas turbine began in 1946. The SNECMA ATAR 101B turbojet, at 5,000 lb. thrust, and the TB.1000 turboprop of the same company, at 1,220 shaft h.p., were in bench-test stages. The SOCEMA TGAR 1008 turbojet, at 4,850 lb. thrust, and its TGA 1*bis* turboprop, at 2,410 shaft h.p., were in the prototype-testing stage.

The Rateau SRA-101 turbojet, made by the SNECMA company, developed 8,820 lb. thrust. New piston-engine development in France was almost at a standstill at the end of 1949, and the engine industry was considered to be in a stage of transition to emphasize gas turbines.

Italy.—The Italian air force, by peace treaty provisions, was limited to 200 defensive fighter and reconnaissance aircraft and 150 trainers and transports. Front-line aircraft in 1949 were surplus Supermarine Spitfires from England and North American Mustangs and Lockheed Lightnings from the U.S.

The aircraft and engine industries in Italy made slow progress in recovering from war damage and were producing only a few light transports, light aeroplanes and military trainers at the end of 1949. Among Italian transports, the Breda-Zappata B.Z. 308 transport for 55 to 80 passengers, powered by four Bristol Centaurus engines, was still undergoing its flight tests in 1949. This was the most advanced transport being built in Italy. The Argentine government ordered ten of these late in 1949.

The engine manufacturers were making light engines principally, but Alfa Romeo and Isotta-Fraschini continued to develop engines for transports and trainers. Isotta's two new engines, the 8-cylinder air-cooled Cypselus at 400 h.p., and the 18-cylinder liquid-cooled Gypagus at about 1,600 h.p., with its latest Delta at 800 h.p., indicated the state of Italian engine development at the end of 1949. Alfa Romeo was producing excellent engines in the medium and light class, but little activity in jet propulsion was in evidence.

The industry was in such a state that both the Caproni and Cant companies were reported closed down, but a new development late in the year placed the Fiat, Macchi, Ambrosini and Alfa Romeo companies in a new position. These firms formed a company to sign contracts with the British de Havilland company to manufacture Vampire fighters and Goblin turbojet engines. An order for 50 Vampires by the Italian government, to be delivered by March 1950, would furnish the air force with jet fighters until the Italian jet-building program should get under way.

Other Countries.—Reflecting the strong research and development program on military aeroplanes and gas turbines in England, Canada and Australia were working on independent designs which might affect the future equipment of their air forces. In *Canada,* the Avro Orenda turbojet completed more than 750 hr. of ground tests, and was being test flown in a North American F-86A fighter. The CF-100 (formerly the XC-100) was expected to make its first flight late in 1949 or early 1950. The outstanding transport development in Canada was the first flights of the Avro C.102, powered by four Rolls-Royce Derwent turbojets. This aeroplane was flown at 500 m.p.h. above 30,000 ft.

In *Australia,* a twin-jet all-weather fighter was reported under development, probably to be powered by Rolls-Royce Tay turbojets. Commonwealth Aircraft corporation was licensed in September to produce the Canberra bomber and the Hawker P.1040 fighter. The Rolls-Royce Nene was being manufactured under licence in Australia, and the de Havilland company in Australia was manufacturing the Vampire, the standard fighter of the R.A.A.F.

In *Sweden* the SAAB Aircraft company received an order for 500 of its SAAB-29 swept-wing jet fighters for the R.S.A.F. The de Havilland Ghost turbojets for this fighter were built in Sweden under licence. The manufacturer reported that the top design speed of 665 m.p.h. had been reached.

The *Dutch* and *Belgian* governments co-operated in an arrangement for building 150 Gloster Meteor fighters. The Fokker Aircraft company of Amsterdam and Aviolanda would build the aeroplanes, and Rolls-Royce Derwent turbojets for them would be built in Belgium. It was reported late in 1949 that the Dutch government would support development of a jet-powered civil transport, to be built by Fokker.

Few changes in equipment were reported from *South America* during the year. The *Argentine* jet fighter, the I.Ae 27 Pulqui, might go into production, as the government factory at Cordoba had a licence to make the Rolls-Royce Derwent turbojet, which that plane uses. The Argentine air force used some Gloster Meteor jet fighters. The possibility that *Brazil* and some other countries might acquire North American F-86 fighters was mentioned in the press, but on the whole South American air forces were equipped with U.S. and British surplus aircraft. (*See* also AIRCRAFT MANUFACTURE; AIRPORTS AND FLYING FIELDS; AVIATION, CIVIL; CIVIL AERONAUTICS ADMINISTRATION; JET PROPULSION; MUNITIONS OF WAR.)

FILMS OF 1949.—*Airlift to Berlin* (Flory Films, Inc.); *America's New Airpower* (March of Time, Forum Edition). (M. H. SM.; S. P. J.)

Avocados: *see* FRUIT.
Azores, The: *see* PORTUGAL.

Bacteriology. The Society of American Bacteriologists held its 49th annual convention at Cincinnati, O., in May 1949 with a full program, including 217 scientific papers. The annual Eli Lilly award was made to Elvin A. Kabat of the Columbia University College of Physicians and Surgeons for his outstanding studies on immunophysics and immunochemistry.

A representative paper in the field of general bacteriology presented at that time dealt with dye replacement in bacterial cells, by J. W. Bartholomew and E. E. Evans of the University of Southern California.

A typical study in the field of bacterial physiology was presented by S. J. Ajl and C. H. Werkman of the Iowa agricultural experiment station who extended knowledge of the new concept that heterotrophic metabolism utilized CO_2 in synthesis. A related paper by S. M. Martin and P. W. Wilson of the University of Wisconsin reported the utilization of CO_2 by *Aspergillus niger*. Among the reports on agricultural bacteriology was a study of nitrogen-fixing bacteria (*Rhizobium*) from *Caragana arborescens* by K. F. Gregory and O. N. Allen of the University of Wisconsin.

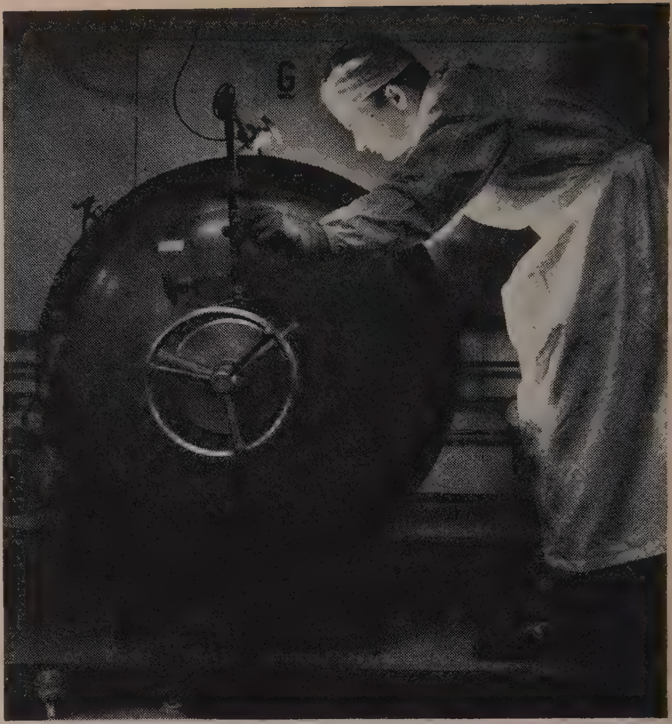
A representative research in the field of industrial microbiology was reported by D. G. Reihard and J. C. Garey of the Pennsylvania State college, who studied the development of free amino acids in cheese during the curing period.

Of many papers on medical bacteriology one of interest to students of streptococci was that by N. B. Williams and M. A. Judson of the University of Pennsylvania school of dentistry, who found enterococci in apical abscesses of teeth and demonstrated *S. faecalis, S. liquefaciens* and *S. zymogenes* in the normal mouth of many persons.

All local branches of the Society of American Bacteriologists held meetings during the year and researches in all fields were described. One interesting study made at the U.S. public health service communicable disease centre, Atlanta, Ga., dealt with the in-vitro virulence test for *C. diphtheriae*. The test was made in a special culture medium and would eventually eliminate the necessity for animals in this important laboratory procedure. At a meeting of the southeastern branch, held at Tuscaloosa, Ala., a motion picture of a simple method for the prolonged preservation of bacteria by desiccation in vacuo was shown for the first time. The film, with sound effects and spoken narrative, was to be made available on loan from the communicable disease centre, U.S.P.H.S., Atlanta, Ga. Many valuable new films and other visual aids to education in bacteriology were also made available during the year by the Society of American Bacteriologists.

A symposium on brucellosis was held at Bethesda, Md., in September and papers were read on every important aspect of the subject by a panel of experts in the field.

On Oct. 28 and 29 the New York Academy of Science sponsored a conference on the mechanism and evaluation of antiseptics. The first session was devoted to antibiotics, the second to surface-active antimicrobial agents, the third dealt with the use of miscellaneous chemicals, especially halogens, as antiseptics. The value of ethyl alcohol as a general disinfectant, long regarded as insignificant, was re-emphasized during this meeting. It appeared that 2% solutions of iodine in alcohol might be one of the most useful disinfectants for external application to the body.



SEALED OBSERVATION CHAMBER housing guinea pigs or rats infected with virulent diseases, at the bacteriology laboratory of the University of California at Berkeley. Devised to protect research workers from infection, the machine was being used in 1949 for a U.S. navy-sponsored study of air-borne bacteria and viruses

Much interest was also shown in new surface-active, synthetic, disinfectant-detergents, a great many of which appeared on the market and in the trade during the year. Special interest centred around the quaternary ammonium compounds, especially their mode of action and inactivators for them to be used in differentiating between their bactericidal action and their bacteriostatic action.

In November the American Type Culture collection published a new catalogue, the first since 1938. In the new edition 2,975 strains of organisms were listed, of which 49% were bacteria, 28% higher fungi and 16% yeast. Included also were algae, protozoa and bacteriophages. Viruses and rickettsiae were to be handled separately and listed in a separate catalogue. (*See* also EPIDEMICS.)

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Badminton. Marten Mendez of San Diego, Calif., captured men's singles honours in the 1949 national badminton championships at Chicago, Ill., when he turned back the challenge of Joseph Alston, also of San Diego, 15–8, 12–15, 15–5, while Ethel Marshall, Buffalo, N.Y., won the women's laurels for the third straight season. Miss Marshall routed Marianna Gott of West Los Angeles, Calif., 11–2, 11–8, in the title round.

In the absence of David Freeman of Pasadena, Calif., with whom he had won the doubles in 1948, Wynn Rogers of Arcadia, Calif., teamed with Barney McCay of Alhambra, Calif., to retain his honours. Thelma Scovil and Janet Wright, both of San Francisco, Calif., again repeated in the women's doubles and Rogers triumphed in the mixed doubles with Mrs. Loma Smith of Arcadia as his partner.

Freeman led a United States team to Great Britain in quest of the Sir George Thomas cup, placed in competition as a prize for international supremacy in the sport. The Americans lost to Malaya, the Pacific zone winner, 6–3, in the semifinal round at Glasgow, Scotland, their conquerors going on to annex the trophy with an 8–1 rout of Denmark in the last round at Preston, England. Freeman, six times the national singles champion, added the all-England and Danish international singles titles to his collection while overseas.

The national junior championships at Baltimore, Md., resulted in three victories each for Ronnie Ryan of Berkeley, Calif., and Judy Devlin of Baltimore. Ryan defeated James Bishop of Hollywood, Calif., 18–17, 8–15, 15–12, in the boys' singles; paired with Bishop to trounce Howard Herbst, Jr., and Michael Roche, a Baltimore team, 15–0, 15–0, in the doubles; then took the mixed doubles with Judy Devlin as they set back Joyce Leach of Baltimore and Bishop, 15–7, 15–5.

Judy Devlin defeated her sister Susan, 11–3, 7–11, 11–8, to capture the girls' individual championship, and then the two combined to annex the doubles crown with a victory over the sister team of Eleanor and Jane Marsh of Wilmington, Del., by a score of 15–7, 15–3. (T. V. H.)

Bahamas. This British colony consists of an archipelago outside the Gulf of Mexico and off the coast of Florida. Area: 4,400 sq.mi. Pop. (1948 est.): *c.* 75,000. Capital: Nassau. The governorship was vacant in 1949.

History.—Rapid progress was made during 1949 in the construction of Butlin's vacation village at West End, Grand Bahama. Announcement was made of negotiations with the United States for passage over the colony of rockets from Florida on the first 500-mi. leg of a Caribbean guided-missile range. A general election in the summer resulted in 13 new members being elected to the house of assembly.

Finance and Trade.—The legal tender is British sterling currency, though U.S. currency is also generally accepted. Budget (1948): revenue £1,360,226; expenditure £1,317,621. Foreign trade (1948): imports £4,720,151; exports (visible) £551,920. Tomatoes, lumber and crawfish were the principal exports in 1948, but the economy of the colony is primarily dependent on the tourist industry. After further re-examination it was decided the sponge beds were not yet sufficiently restored to justify reopening. (Jo. A. Hn.)

Bahrein Islands: *see* British Empire.
Balearic Islands: *see* Spain.
Balkan States: *see* Albania; Bulgaria; Greece; Rumania; Turkey; Yugoslavia.
Ballet: *see* Dance.
Baltic States: *see* Estonia; Latvia; Lithuania.

Baltimore. Baltimore is the metropolis of Maryland and had a population of 859,100 in 1940. Of the total population, 692,705 were white persons and 166,395 (19.4%) nonwhite, principally Negro. The estimated population as of July 1, 1948, was 958,000, of which 757,000 were white and 201,000 nonwhite. The land area of the city is 78.72 sq.mi.; the water area, 13.21 sq.mi. Thomas D'Alesandro, Jr., Democrat, was mayor in 1949, having been elected for a four-year term in May, 1947.

Budget appropriations for 1950 were $122,620,039.97; for 1949, $168,557,542.24. The city tax rate for 1950 was $2.88 per $100 of assessed valuation and the rate for 1949 was $2.78. The taxable basis for 1950 was $2,327,049,041 and for 1949 it was $2,210,953,989. The gross funded debt as of Nov. 30, 1949, was $191,415,000; the sinking funds amounted to $43,244,521, leaving a debt of $148,170,478 as of Nov. 30, 1949, not including accrued income. The percentage of net debt to the taxable basis (excluding self-supporting indebtedness) was 4.60% for the year 1949.

The net enrolment on Oct. 31, 1949, in the public schools of the city was 76,358 white students and 39,654 Negro students; and, in addition, 8,715 white and 4,872 Negro students were enrolled in adult education classes. William H. Lemmel had been superintendent of the Baltimore city schools since July, 1946. The public schools of Baltimore are a separate and distinct unit, and are not under the jurisdiction of the state department of education.

Ranking as the second United States port in foreign-trade tonnage, the combined value of exports and imports at the port of Baltimore during the first seven months of 1949 came to nearly 8,764,000 long tons, an increase of 7.2% over the corresponding period of the previous year. Import tonnage advanced 24.3% but export traffic, largely on account of a sharp reduction in overseas coal shipments, declined 17.1%.

Although manufacturing activity in the Baltimore area during 1949 receded somewhat from the high level for 1948, the total output for the year represented one of the best peacetime showings on record. During the first nine months of the year employment in manufacturing averaged around 162,500. The leading industries, based upon the volume of employment, included iron and steel products, shipbuilding and repairing, aircraft, communications equipment, men's clothing, bakery products, beverages, metal stampings, tin containers and meat products. Total nonagricultural employment in Baltimore and vicinity at the middle of 1949 was estimated as 535,000, including self-employed persons and domestic servants. (H. E. F.)

Bananas: *see* Fruit.

Banking. In 1949, banking and monetary developments followed a pattern first of moderate contraction of bank credit and then of renewed expansion. Contraction of bank credit occurred in the winter and spring, accompanying the downward movement in business. Later in the year, recovery in levels of economic activity brought about a resumption of bank credit expansion.

A notable development in the field of banking which occurred during 1949 was a comprehensive congressional study and investigation into the effectiveness and co-ordination of monetary, credit and fiscal policies. The subcommittee on monetary, credit and fiscal policies of the joint committee on the economic report received statements on the issues involved from the chairman of the board of governors of the federal reserve system, the presidents of the federal reserve banks, the secretary of the treasury, the comptroller of the currency, the chairman of the Federal Deposit Insurance corporation and the director of the budget, as well as from heads of other government agencies in the credit field, and from a number of leading economists, bankers and businessmen. Publication of this collection of statements was followed by hearings before the subcommittee, headed by Sen. Paul H. Douglas of Illinois, during November and December, and by a submission of a report by the subcommittee in Jan. 1950. Strong differences in opinion among government officials, bankers and economists appeared in the course of the congressional inquiry. In its report, the subcommittee recommended "not only that an appropriate, vigorous, and coordinated monetary, credit, and fiscal policy be employed to promote the purposes of the Employment Act, but also that such policies constitute the Government's primary and principal method of promoting those purposes." The subcommittee further stated that "the advantages of avoiding inflation are so great and that a restrictive monetary policy can contribute so much to this end that the freedom of the Federal Reserve to restrict credit and raise interest rates for general stabilization purposes should be restored even if the cost should prove to be a significant increase in service charges on the Federal debt and a greater inconvenience to the Treasury in its sale of securities for new financing and refunding purposes."

In 1949 total bank deposits, other than interbank and United States government, and currency outside banks rose by $1,000,000,000 to reach a new all-time high level of $170,100,000,000 at the end of 1949. The decline in currency outside banks of about $1,100,000,000 marked an acceleration of the decline of the preceding two years. Demand deposits adjusted rose $1,200,000,000 during the year. The rise in total time deposits adjusted, amounting to $1,000,000,000, represented a corresponding increase of time deposits at mutual savings banks with an increase of $100,000,000 in time deposits at commercial banks being offset by a decline of about the same amount in postal savings deposits.

During the year as a whole, total loans of all commercial banks increased by about $800,000,000. Holdings of government securities rose $4,700,000,000 and holdings of other securities increased about $1,000,000,000. Total loans and investments rose by about $6,500,000,000 during 1949. These developments were in sharp contrast to those of the previous year when a large increase in total loans of all commercial banks was offset by a greater decline in holdings of government securities with total loans and investments showing a decline.

At the end of the year, total loans of all commercial banks amounted to $43,300,000,000, exceeding all previous records. During the years 1946, 1947, 1948 and 1949, major changes had taken place in the composition of loans and investments of all commercial banks. Total earning assets of all commercial banks showed some decline in the four years from $124,000,000,000 on Dec. 31, 1945, to $120,800,000,000 at the end of 1949. Total loans were up $17,200,000,000. In contrast, holdings of government securities declined by $23,300,000,000. Holdings of other securities rose $3,000,000,000.

On June 30, 1949, national banks, which numbered almost 5,000, held $78,200,000,000 of total deposits. State banks, which numbered somewhat over 9,000, had total deposits of $59,300,000,000.

During 1949 as a whole the gross federal debt rose by almost $4,400,000,000 to $257,100,000,000 on Dec. 31, 1949. The low point in the gross public debt during the year was reached on June 27 when it stood at $251,200,000,000. This was in contrast to the preceding postwar years of reduction in the federal debt. Total marketable obligations were reduced by $2,400,000,000, with increases in amounts outstanding of treasury certificates of indebtedness and notes partially offsetting a substantial retirement of marketable treasury bonds. Nonmarketable public issues outstanding continued to rise, with increases of more than $3,000,000,000 in treasury savings notes outstanding and $1,700,000,000 in United States savings bonds. Special issues, held by government trust funds and corporations, rose during the year by $2,200,000,000.

In the first 11 months of calendar year 1949 the treasury incurred a net cash deficit of $1,500,000,000, in sharp contrast to an excess of cash receipts of the federal government over cash expenditures of $8,200,000,000 in calendar year 1948. The budget document for fiscal year 1951 forecasted continued cash deficits and increases in the public debt through cash borrowing from the public. Official estimates indicated that the cash surplus of $1,000,000,000 in fiscal 1949 would be followed by cash deficits of $4,900,000,000 in fiscal 1950 and $2,700,000,000 in fiscal 1951 on the basis of legislation proposed in the budget message. According to these estimates the gross federal debt would reach a figure of $263,800,000,000 by June 30, 1951.

Total consumer credit outstanding stood at $18,800,000,000 at the end of Dec. 1949, an increase of 15%, or $2,500,000,000 during the year. Almost all of the total growth occurred in the instalment credit category, with noninstalment credit, including charge accounts, single payment loans and service credit rising only slightly. Outstanding automobile sale credit rose by $1,200,000,000 or 61% during the year, as sales of new cars continued at peak levels and consumers increased the proportion of durable goods purchases bought on time. Apparently in response to eased credit terms, which occurred after expiration of regulation W on June 30, other instalment sale credit outstanding (appliances, furniture, radio and television sets) was 21% greater than at the end of 1948. Cash instalment loans increased 14% during 1949, evidencing a gradually weakening liquid asset position on the part of individual consumers.

The gold stock showed little change during the year as a whole. An increase of almost $400,000,000 in the gold stock in the first nine months of the year was followed by a decline of almost $300,000,000 after devaluation of the British pound and other currencies in September. Just before the devaluation of the pound sterling on Sept. 18 and the subsequent changes in other currency values, the gold stock reached an all-time high of about $24,700,000,000.

The volume of bank debits of the banks in 333 reporting centres during 1949 was 1.5% less than in 1948, although it remained considerably more than twice the prewar volume. The slight percentage decline in bank debits was about the same as the percentage decline in gross national product from 1948 to 1949. The annual rate of turnover of demand deposits outside New York city declined during the year in contrast to increases in previous postwar years.

Corporate issues for new capital decreased in 1949, compared with the preceding year, but nevertheless remained at a high level. New corporate security financing fell off sharply during the last six months of the year, however, in large part as a result of a moderate decrease in business capital expenditures and lessened working capital requirements. The tendency for a growing reliance on internal sources of funds continued in 1949. Bond issues comprised the bulk of corporate issues for new capital purposes, although the volume of new stock issues somewhat exceeded the 1948 total. Refunding issues were in small volume. (*See* also BUSINESS REVIEW; CONSUMER CREDIT; EXPORT-IMPORT BANK OF WASHINGTON; FEDERAL RESERVE SYSTEM.) (J. K. L.)

Mutual Savings Banks.—The mutual savings banks of the United States ended the year July 1, 1949, with assets totalling $21,112,142,047, deposits of $18,948,020,111, and surplus of $2,062,634,259, equivalent to 10.9% of deposits. During the year ended July 1, 1949, the net increase in assets was $849,184,942 or 4.2%, and the net increase in deposits was $738,588,044 or 4.1%. These increases were less than those recorded during the previous year of $910,356,586 or 4.7%, and $793,955,422 or 4.6% respectively. There were 19,186,258 accounts on July 1, 1949, a net gain of 432,579 or 2.3% during the year, whereas during the previous year there was a net gain of 566,661 accounts or 3.1%.

On Dec. 31, 1949, there were 531 banks and 198 branches in operation, a net decrease of one bank and an increase of 17 branches during 1949, two of which were the result of mergers.

The annual growth of the savings banks had become relatively stabilized during the past three years at an amount less than $1,000,000,000. In the calendar year 1947 the net increase in deposits of mutual savings banks was $946,407,838; in the year 1948 it was $641,345,892, and for the first half of 1949 $547,742,152. In this same period the private share capital in savings and loan associations grew at the rate of $1,200,000,000 annually, and private life insurance reserves increased $3,500,000,000 annually. In addition the savings departments of commercial banks, the post offices by means of postal savings, the U.S. treasury department by selling savings bonds, and open-end investment trusts actively competed for the savings of the small investor. Since the portion of national income available for current savings had declined sharply since World War II, it had become necessary for the savings banks to extend their efforts to get new business. More branches, longer hours and higher dividend payments were adopted by many banks, and legal investment provisions of various savings bank states were changed to enable the banks to broaden their investments and so to increase earnings.

On July 1, 1949, the combined assets of all mutual savings banks consisted of the following: U.S. government securities 55.22%; other securities 11.21%; mortgage loans 28.18%; cash and other assets 5.39%. Mortgage loans amounted to $5,950,000,000, an increase of $816,000,000 over the amount outstanding July 1, 1948. Since July 1, 1949, more than $146,000,000 in loans were purchased from the Home Owners Loan corporation by savings banks in Massachusetts, New Jersey and New York in addition to loans made by the usual procedure. The combined portfolio of FHA and Veterans' administration insured loans was $1,334,000,000, or 23.9% of all mortgage loans on Jan. 1, 1949, the latest date for which detailed mortgage figures were reported. (HE. BR.)

Great Britain.—The year 1949 opened in Great Britain with a decisive downturn in the volume of bank money, explained partly by seasonal factors and partly by the pressures exerted by the government's money policy. The budget proposals introduced in April turned out to be less disinflationary in their effect than Sir Stafford Cripps, the chancellor of the exchequer, had intended and bank deposits showed a tendency during the summer and autumn months to climb at a pace that could not be wholly explained by seasonal considerations. The table giving the outturn for 1949 up to October of the 11 London clearing banks (which together accounted for about 95% of all commercial banking resources in Britain) showed that at that time the total of bank deposits was virtually as high as a year before.

Eleven London Clearing Banks

(£ million)

	Oct. 1947	Oct. 1948	Oct. 1949
Deposits	5,690	6,040	6,049.6
True deposits	5,510	5,855	5,867.9
Cash	468	485	498.7
Call money	466	497	555.7
Bill holdings	825	802	1,162.1
Treasury deposit receipts	1,147	1,313	744.0
Investments	1,500	1,475	1,516.8
Advances	1,176	1,355	1,465.5
Acceptances, etc.	238	243	260.8

Examination of the banks' asset figures given in the table reveals that although total bank resources showed little net change in 1949, there were important changes in the way in which these resources were employed. In the first place, there was a considerable drop in the volume of bank lending to the public sector of the economy and an equally large expansion in lending to the private sector. The fact that cash, call money, holdings of bills and treasury deposit receipts together showed a substantial net decline during the year was the result of a reduction in the volume of bank financing of the government's floating debt. The rise in bank loans reflected the provision of additional finance by the banks to industry and commerce. Further, as there was no reason to suppose that the government was a net seller of medium and longer-dated government securities during the year, the presumption was that the increase recorded in the banks' investments also indicated purchases from the general public and therefore an indirect method of extending additional finance to the private sector of the economy.

An original intention of the Cripps disinflation policy was to repay the government debt held by the banks with the aid of a budget surplus and so place these institutions in a position to furnish, without increasing total lendings, the additional monetary resources needed by industry to finance reconstruction and development. This intention appeared to have been largely realized in 1949 so far as the switch from official to private lending by the banks was concerned. But in the event the contraction in bank lending to the government was due more to an unexpected accumulation of sterling resources in the hands of the government departments caused by the development of a substantial over-all trade gap in the middle of the year than to an excess of government receipts over payments on budget account.

The second major change in the deployment of British bank resources in 1949 was the result of the official decision to reduce the amount of government borrowing on the treasury deposit receipts in favour of increased borrowing on treasury bills. This development was welcomed, the banking community in general having long argued that the treasury deposit receipt, introduced during World War II as a means of drawing finance in the required amounts from the banking system quickly and conveniently, was not suited to peacetime conditions. (*See* also BANK OF ENGLAND.)

FILMS OF 1949.—*Banking and Credit* (Coronet Instructional Films).
(C. H. G. T.)

Bank of England. Developments in Great Britain's external affairs were the main concern of the Bank of England during 1949. The bank normally acts as adviser to the treasury in currency matters and also undertakes main responsibility for the operation of the country's exchange control machinery. In consequence, in the period prior to the devaluation of sterling in September it was called upon to play a large part in devising and enforcing measures to check the growth of evasion of the sterling area exchange regulations stimulated by the increased profitability of overseas black market dealings in cut-price sterling. Such measures were designed in particular to prevent legitimate sterling area dollar earnings being tapped by third countries and largely took the form of a general tightening-up of restrictions on transactions in sterling among the nonsterling countries. In the devaluation period, the bank's services were in demand in connection with the determination of the pound's new level and with preparations for the execution of the realignment operation. Subsequently it was required to devote its energies to an examination of the opportunities created by devaluation for adjustments in British exchange control policies to assist the flow of international trade and payments.

Movements in the note circulation were within narrower limits in 1949 than in the previous year, there being no evidence of

Bank of England

(£ million)

	Oct. 26, 1949	Oct. 27, 1948	Oct. 29, 1947
Issue Department:			
Notes in circulation	1,259	1,231	1,361
Fiduciary issue	1,300	1,300	1,450
Banking Department:			
Public deposits	14	13	14
H. M. treasury special a/c	63	20	—
Bankers' deposits	398	307	289
Other deposits	107	93	96
Government securities	403	322	288
Other securities	27	57	37
Reserve	47	72	91

large-scale hoarding or dishoarding of bank notes by the public. In the first half of the year, the amount of currency in circulation showed a tendency to rise more rapidly than could be explained by seasonal factors, presumably because of the existence of inflationary pressures in the country. The total value of notes was raised by £50,000,000 by temporarily increasing the fiduciary issue to £1,350,000,000 between July and September to meet the summer holiday demand for additional currency.

The bank's annual report to Feb. 28, 1949, contained an analysis of the note circulation by denominations, as well as other statistical material relating to the bank's activities and a summary of external financial agreements concluded by the British authorities in the previous 12 months. (C. H. G. T.)

Bankruptcy: *see* SECURITIES AND EXCHANGE COMMISSION.

Baptist Church. The Northern Baptist convention of the United States meeting in San Francisco, Calif., May 30 to June 3, 1949, registered 5,071 delegates. It was reported that, of the $16,163,601 pledged to the World Mission crusade in 1947, 92.9% had been received. It was voted to allocate a larger percentage of the budget than formerly to foreign missions. Negotiations with the Disciples of Christ concerning the merger of the two bodies were to continue. A proposal to change the name, Northern Baptist convention, to American Baptist convention was approved. A general secretaryship was created by combining the corresponding secretaryship and the recording secretaryship, the incumbent to serve as the recognized spokesman for the convention. Mrs. Howard G. Colwell of Loveland, Colo., was chosen president for the year 1949–50, the third woman to hold the office. The 1950 convention was scheduled to meet in Boston, Mass., May 21 to 26, 1950. Dr. G. Pitt Beers, executive secretary of the American Baptist Home Mission society of the Northern convention assured the Church World service the denomination would provide homes for 1,200 families of displaced persons.

BAPTIST TEMPLE built at Akron, O., to house what church officials estimated was the largest Baptist congregation in the U.S. The new temple was opened for services in April 1949

The Southern Baptist convention met in Oklahoma City, May 18 to 22, 1949, registering 9,357 messengers. Total gifts for the year 1948–49 amounted to $156,605,521. The Foreign Mission board proposed a goal of 1,750 foreign missionaries and an annual budget of $10,000,000. The 26,822 convention churches reported 312,246 baptisms, bringing the total membership to 6,491,981. The convention also operates 25 hospitals valued at $42,176,301. Its three theological seminaries, Southern, Southwestern and New Orleans, reported a total enrolment of 2,551 students. The convention formed a special organization through which individuals and churches may become sponsors for displaced persons. The 1950 convention was to be held May 7 to 12, in Chicago.

A new Baptist church at Nagyvarsany, Hungary, was consecrated May 9, 1949, with 1,000 Baptists present. The World Congress of Baptist Youth, numbering 1,350 delegates from 23 countries, met Aug. 3 to 9, 1949, in Stockholm, Sweden.

During the first week of Sept. 1949, the Baptists of Wales celebrated the Tercentennial of the founding of the first Baptist church in the principality. A memorial lectern to William Carey, the great Baptist missionary appointed by English Baptists to India in 1792, was dedicated in Westminster abbey, Oct. 11, 1949. Dr. S. Pearce Carey presented the lectern which was received and dedicated by the dean of the abbey.

During 1949 plans were being consummated for a Commonwealth and Empire Baptist congress to be held in London, England, June 3 to 10, 1951.

The Ontario and Quebec Baptist convention, Canada, celebrated its diamond jubilee, June 9 to 12, 1949. (*See* also CHURCH MEMBERSHIP.) (R. E. E. H.)

Barbados. Barbados is a British colony consisting of the most easterly of the Caribbean islands. Area: 166 sq.mi. Pop. (1948 est.): 198,000. Capital and chief port: Bridgetown (pop. 13,345). Governor in 1949: A. W. L. Savage.

History.—During 1949 constitutional changes were proposed by the house of assembly to the effect that it should have undivided authority in matters of finance, the life of the assembly should be extended from two to three years and a parliament bill should be introduced to regulate relations between the assembly and the legislative council on the basis of those existing between the British house of commons and the house of lords; and that if necessary the governor request the secretary of state for power to nominate sufficient additional legislative councillors to secure the passage of the bill.

A report on local government by Sir John Maude recommended that the 300-year-old system of 11 vestries and 32 parochial boards should be abolished, and that the colony should be divided up into three areas for local government purposes: a northern district and a southern district (each with a council) and the town of Bridgetown, which should be granted municipal status with its local government entrusted to a city council.

Finance and Trade.—Currency: West Indian dollar, set at 4.8 to the pound. On Nov. 14, 1949, the West Indian dollar was valued at 58.33 cents U.S. Budget (1948-49): revenue £1,940,467; expenditure £2,051,-626. Foreign trade (1948): imports £6,346,230; exports £3,048,165. Principal exports: sugar and its by-products, molasses and rum.

(Jo. A. Hn.)

Barkley, Alben William

(1877–), vice-president of the United States, was born on a farm in Graves county, Ky., on Nov. 24, and attended Marvin college, Clinton, Ky., Emory college, Oxford, Ga., and the University of Virginia law school, Charlottesville, Va. He was elected prosecuting attorney of McCracken county, Ky., in 1905, and was judge of McCracken county court, 1909–13.

He was elected to the U.S. house of representatives in 1913 and after 14 years there was elected to the senate. He was keynote speaker at the 1936 Democratic national convention; permanent chairman of the 1940 convention; and delivered the speech nominating Franklin D. Roosevelt for a fourth term at the 1944 convention.

Throughout much of World War II he was senate majority leader and, as such, shepherded numerous wartime and emergency acts through that body. In 1946, when the Republicans gained control, he became senate minority leader. Keynote speaker at the Democratic national convention in Philadelphia, Pa., in 1948, he was there nominated Democratic candidate for the vice-presidency and was elected with Pres. Harry S. Truman, taking office in 1949 as the nation's first vice-president since April 12, 1945.

As president of the senate, Barkley participated in President Truman's first major defeat by the 81st congress, when he sought to accept a "gag" petition that would have ended a southern filibuster against a civil rights bill, but was overruled by the senate. He attended, with President Truman, the signing of the North Atlantic treaty in April. Repeatedly during the summer he was quoted as urging the passage of one or another piece of Truman's legislative program, including a modified labour law and acts to reorganize the executive branch of the government. On Nov. 18, Barkley, who had been a widower since 1947, married Mrs. Carleton S. Hadley, whose husband had died in 1945.

Barley.

The United States barley crop of 1949 was estimated at 238,104,000 bu., the smallest crop since 1937 and only about three-fourths as large as the 315,894,000 bu. of 1948 and a ten-year average of 304,741,000 bu. The total harvested acreage of 9,879,000 was 18% less than in 1948 and 22% less than average, the major reduction coming in the important producing states of North Dakota (26,608,000 bu.), Minnesota (25,464,000 bu.) and South Dakota (14,958,000 bu.). California, as usual, led in production with 47,038,000 bu., and Colorado was fourth with 23,256,000 bu. The average yield of 24.1 bu. per acre was less than the 26.4 bu. of 1948 but approximately average for the decade.

Barley prices during 1949 broke to new lows since World War II, the national average price to farmers falling from $1.15 per bushel early in the year to 93 cents in June, then recovering to about $1.10 per bushel late in the year. The probable average price for the crop was estimated at $1.05 per bushel compared with $1.17 per bushel for the 1948 crop. Government support at 72% of the April 1949 parity or $1.09 per bushel helped to stabilize the price.

The world crop of barley was estimated preliminarily at 2,250,000,000 bu., compared with 2,380,000,000 bu. in 1948 and an average of 2,358,000,000 bu. for 1935–39. Harvested acreage, estimated at 111,640,000, was 2,000,000 less than in 1948 and slightly less than the prewar average. Canadian production of 120,383,000 bu. was sharply lower than in 1948 and European production was 675,000,000 bu., compared with 630,000,000 bu. in 1948.

(J. K. R.)

Baseball.

On June 5, 1949, more than three years after they had been suspended for five years from professional baseball for jumping to the Mexican league, 18 former major league players were granted complete amnesty by Commissioner A. B. Chandler and invited to return to their former clubs immediately.

Among the athletes restored to good standing were pitchers Max Lanier and Fred Martin and infielder Lou Klein, who rejoined the St. Louis Cardinals and took leading roles in the pennant race.

Catcher Mickey Owen, who had been one of the prime movers toward removal of the ban, returned to the Brooklyn Dodgers, but, after a few games, was sold to the Chicago Cubs because of Brooklyn's abundance of catchers. Luis Olmo, an outfielder, also rejoined the Dodgers. Other clubs benefitting immediately by the commissioner's amnesty included the Giants, who received pitcher Adrian Zabala and infielder George Hausmann, and the Athletics, who received outfielder Bobby Estalella.

Reinstatement of the players eventually led to the cancellation of a $2,500,000 damage suit filed against professional baseball by pitchers Lanier and Martin and a $300,000 suit brought by Danny Gardella, former New York Giant outfielder. Lanier and Martin had filed their suit on March 8 in New York city, Lanier asking $1,500,000 in damages and Martin $1,000,000, on the grounds that professional baseball violated antitrust laws in banning them from making a livelihood as professional ballplayers in the United States.

Gardella's suit, which had been reinstated by the U.S. court of appeals in New York on Feb. 9 after it had been thrown out earlier by the federal district court, was dropped on Oct. 7, clearing the final legal obstacle for professional baseball. Gardella was subsequently released by the Giants and signed with the St. Louis Cardinals for 1950.

Managerial Changes.—Frank Frisch, Hall of Fame second baseman who had previous experience as a major league pilot with the St. Louis Cardinals and Pittsburgh Pirates, became the new skipper of the Chicago Cubs on June 10. Frisch, who had opened the season as coach for the New York Giants, replaced Charlie Grimm, who was promoted to vice-president in charge of player operations.

On Aug. 16, the National league champion Boston Braves gave Manager Billy Southworth a leave of absence for the remainder of the season because of declining health. Coach Johnny Cooney was put in charge by Pres. Lou Perini.

Bucky Walters, who replaced Johnny Neun at the helm of the Cincinnati Reds on Aug. 6, 1948, was released Sept. 29, and Coach Luke Sewell piloted the Rhinelanders in their remaining games, after which he was signed to pilot the club in 1950. The fourth managerial head to fall was that of Joe Kuhel, who was dismissed as skipper of the Washington Senators after the close of the campaign. He was replaced by Stanley (Bucky) Harris, manager at San Diego, Calif. (Pacific Coast), in 1949, who had served two previous terms as pilot of the Senators—in 1924–28 and 1935–42.

Ownership, Other Changes.—For the first time in major league history, two clubs changed ownership within one week's time. In the first instance, Jan. 27, Fred Saigh, Jr., bought out his partner, Bob Hannegan, as owner of the St. Louis Cardinals. On Feb. 2, the DeWitt brothers, William O. and Charles W., acquired control of the St. Louis Browns from Richard Muckerman.

A third organization changed ownership on Nov. 21, when

Bill Veeck, who had headed a syndicate which purchased the Cleveland Indians in 1946, sold the club to a seven-man group headed by Ellis W. Ryan, insurance executive, for an estimated $2,200,000.

The top player deal transferred pitcher Murry Dickson from the Cardinals to the Pirates for $125,000. In other manoeuvres, the Dodgers brought up pitcher Don Newcombe from their Montreal, Que., farm, May 15, and the Negro righthander immediately became one of the aces of Manager Burt Shotton's staff. The Boston Red Sox also sought to strengthen their hill staff by trading pitcher Mickey Harris and outfielder Sam Mele to the Washington Senators for hurler Walter Masterson. The New York Giants sent catcher Walker Cooper to the Cincinnati Reds for catcher Ray Mueller and later disposed of first baseman Johnny Mize to the New York Yankees via the waiver route.

Charlie Gehringer, former second-base star with the Detroit Tigers, was the only modern player elected to the Hall of Fame by the Baseball Writers Association of America, although Charles A. (Kid) Nichols and Mordecai (Three-Finger) Brown, standout moundsmen in the early years of the century, were also voted into the shrine by a permanent baseball Hall of Fame committee.

The influx of Negro players into the majors continued at a steady pace. The Giants brought up second baseman Hank Thompson, who had a trial with the Browns in 1947, and outfielder Monte Irvin, from Jersey City, N.J., at midseason and the Cleveland Indians added their third Negro athlete in August when Luke Easter, giant first baseman from San Diego, joined outfielder Larry Doby and pitcher Leroy (Satchel) Paige on the club's roster.

An early-season squabble between the Yankees and the Indians was settled by Commissioner Chandler, who ordered the Indians to give infielder Artie Wilson to Newark, farm club of the Yankees, while instructing Newark to return outfielder Luis Marquez to the Indians. Chandler ruled that the Indians had interfered with Wilson while the Yankees were negotiating with the athlete, and adjudged the Yankees guilty of signing Marquez while the Indians had an option on him.

After more than two months on the side lines because of an ailing heel, Joe DiMaggio made his 1949 debut at Boston, Mass., June 28. In his first game, the Yankee Clipper clouted a two-run homer to feature a 5 to 4 victory. The next day he poled two round-trippers, one with two mates on the basepaths, to highlight a 9 to 7 victory, and the third day he rapped a three-run homer as New York scored a 6 to 3 win.

The game experienced a near-fatal tragedy on June 15 when Eddie Waitkus, first baseman of the Philadelphia Phillies, was shot by a young typist in a Chicago hotel room. The girl, Ruth Ann Steinhagen, lured Waitkus into the room on the pretext of having an urgent message for him. Following examination, the girl was confined to an institution for the mentally deranged.

Violations and Penalties.—Commissioner Chandler cracked down on the New York Giants for alleged violation of the game's "no tampering" rule on Jan. 12. He assessed the club $2,000 for negotiating with Coach Fred Fitzsimmons while the former pitcher was on the reserve list of the Boston Braves; fined Manager Leo Durocher $500 for instituting negotiations and also docked Fitzsimmons $500 and suspended him 31 days, beginning March 1, for his part in the incident.

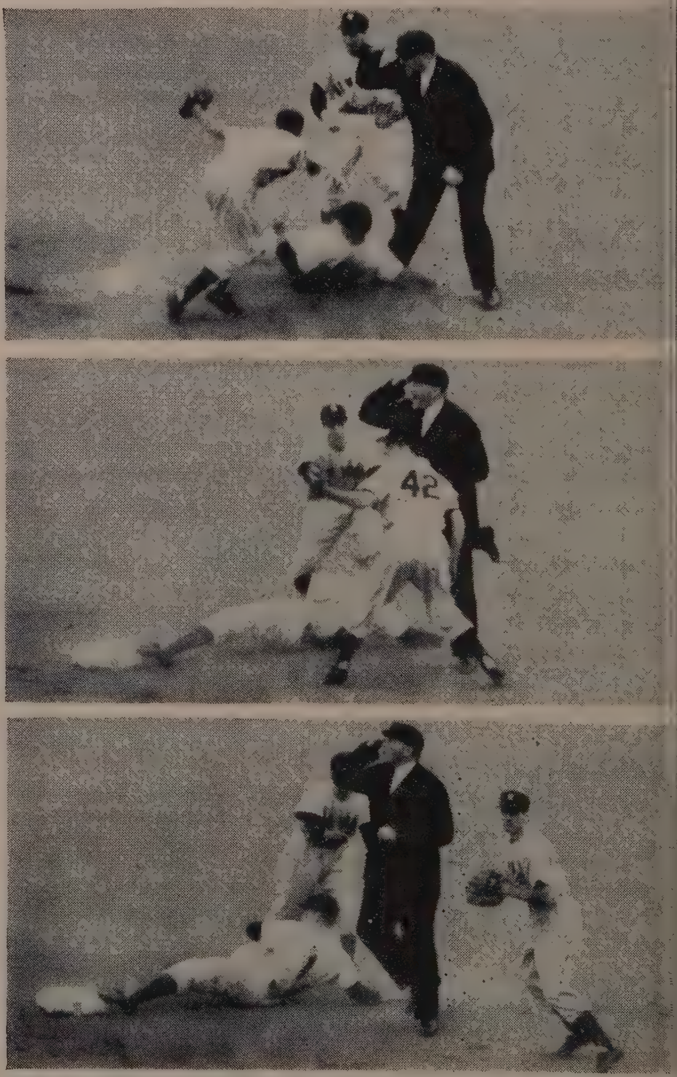
Durocher experienced a second brush with Commissioner Chandler on April 29, when he was indefinitely suspended for allegedly assaulting a fan following a game at the Polo Grounds. The Giant pilot was cleared and reinstated, however, on May 3, following a hearing at the commissioner's offices in Cincinnati, O.

Records.—Albert (Red) Schoendienst of the St. Louis Cardinals established a National league record at second base, May 22, when he played his 39th consecutive game without an error, breaking the former mark of 38 games set by Buck Herzog of the Cubs in 1919. By handling 236 chances without a bobble during that stretch, Schoendienst also surpassed the former mark of 196 chances set by Hugh Critz of the Giants in 1932. Before his flawless fielding streak ended, May 29, Schoendienst played 44 consecutive games and handled 268 chances without a bobble.

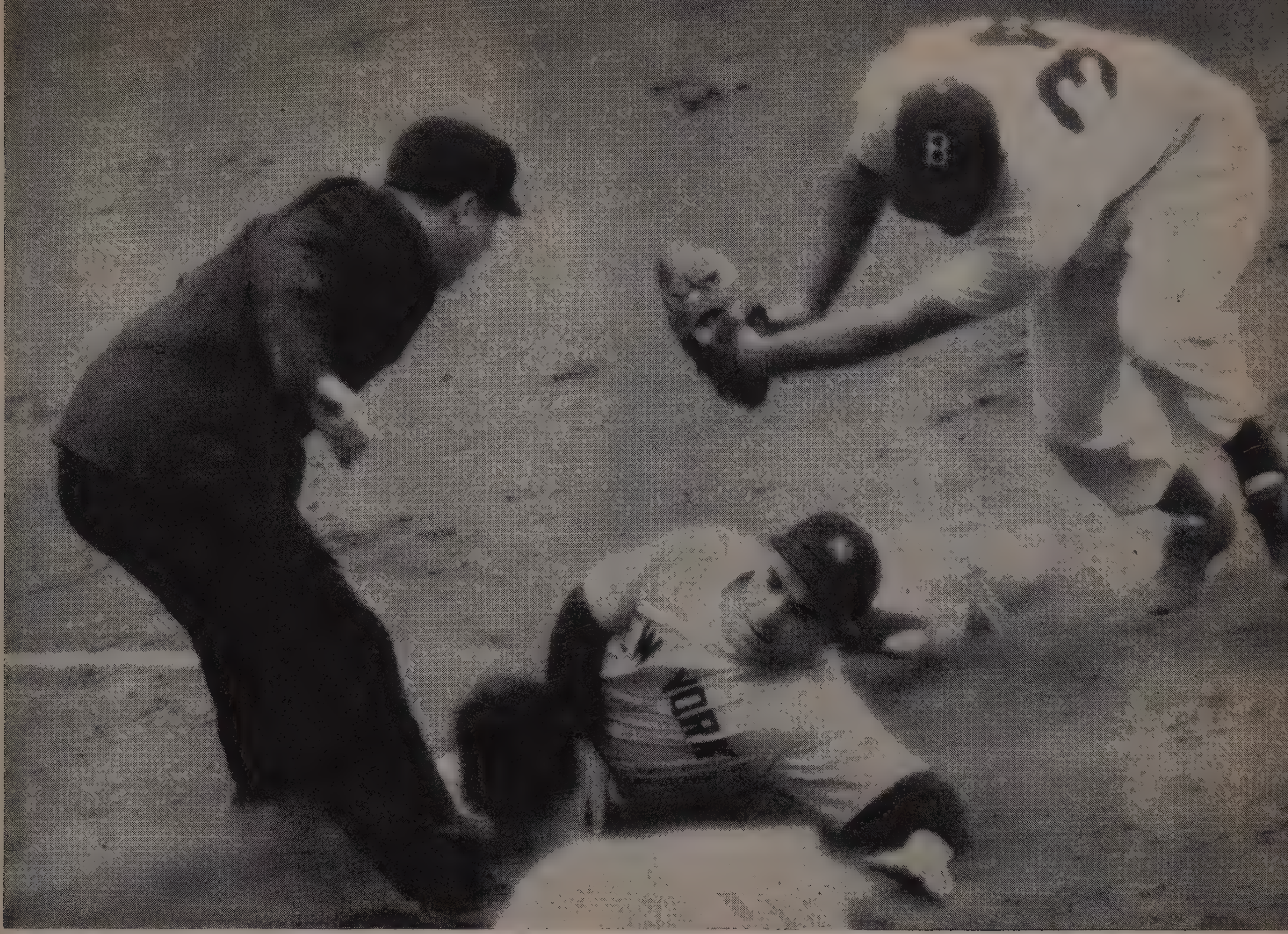
Luke Appling of the Chicago White Sox played his 2,154th game at shortstop on Aug. 6, to break the former standard for games at that position held by Walter (Rabbit) Maranville.

On July 26, Wally Moses, Athletics' outfielder, became the 86th player to collect 2,000 hits during his major league career, when he singled in the fifth inning of a 5 to 4 victory over the Browns.

Major League Races.—In what were probably the most dramatic races in big league history, the New York Yankees and Brooklyn Dodgers captured the American and National league championships, respectively. Each pennant was decided on the closing day of the season with the Yankees defeating the Boston Red Sox, 5 to 3, to edge out Joe McCarthy's club by one game, and the Dodgers defeating the Phillies, 9 to 7, to protect their one-game margin over the St. Louis Cardinals.



PEEWEE REESE, Brooklyn Dodger shortstop, being tagged out by New York Yankee second baseman Gerald Coleman (42), as he tried to slide into second base in the first inning of the third game of the 1949 world series. The umpire was Cal Hubbard, and Yankee shortstop Phil Rizzuto backed up the play



YOGI BERRA, New York Yankee catcher, safe at third base as he eluded attempted tag of Eddie Miksis (34), Brooklyn Dodger third baseman. Brooklyn's catcher tried to pick him off base in the first inning of the fourth game of the 1949 world series, played in Brooklyn, N.Y., on Oct. 8. The umpire was Art Passarella

who beat the Chicago Cubs.

The Yankees, picked to finish third in preseason forecasts, amazed the experts by leading the pack from the opening day until they were replaced briefly by the Red Sox in the closing week of the campaign. Trailing by one game with only two to go, New York defeated Boston on the next to last day and then completed the rout the following day.

In the senior circuit, the Cardinals had a one and one-half game edge over the Dodgers with only five games remaining. However, the St. Louisans went into a tailspin the final week and lost four straight contests—two to Pittsburgh and two to Chicago—before righting themselves, too late, to cop the final game of the season.

Individual Performances.—Ted Williams' bid to win the triple crown—high-batting-average, runs-batted-in and home-run leadership—was thwarted on the final day of the season when George Kell, Detroit third baseman, passed up the Boston outfielder, posting a mark of .3429 to Ted's .3427. Williams won home-run honours, however, with 43, and tied for runs-batted-in laurels with his teammate Vern Stephens at 159. In a poll of baseball writers, Williams also was acclaimed the most valuable player of the year in the American league.

Although losing the flag, the Red Sox produced the two top winning pitchers of the year in the majors. Mel Parnell won 25 games against 7 losses and Ellis Kinder posted 23 victories compared with only 6 setbacks.

Jackie Robinson won the National league batting title with .342, shading Stan Musial, who finished second, by three points, and gained the most valuable laurels in the senior circuit. At one stage the Dodger Negro star had a lead of more than 30 points, but slipped in the late stages and barely managed to stave off the Cardinal ace's rush.

Warren Spahn, Boston lefthander, registered the most wins in the senior loop with 21, while Howie Pollet of the Cardinals annexed his 20th triumph on the closing day. The top hurler in percentage, based on moundsmen who figured in ten or more decisions was Ted Wilks, St. Louis relief specialist, who posted a 10–3 record.

Among the rookie performers, Roy Sievers, who hit .306 for the Browns, and Don Newcombe, who posted a 17–8 mark for the Dodgers, were voted the outstanding freshmen in the American and National leagues, respectively, by the *Sporting News* and the Baseball Writers Association of America.

Final Standings

AMERICAN LEAGUE				NATIONAL LEAGUE			
Club	Won	Lost	Pct.	Club	Won	Lost	Pct.
New York	97	57	.630	Brooklyn	97	57	.630
Boston	96	58	.623	St. Louis	96	58	.623
Cleveland	89	65	.578	Philadelphia	81	73	.526
Detroit	87	67	.565	Boston	75	79	.487
Philadelphia	81	73	.526	New York	73	81	.474
Chicago	63	91	.409	Pittsburgh	71	83	.461
St. Louis	53	101	.344	Cincinnati	62	92	.403
Washington	50	104	.325	Chicago	61	93	.396

All-Star Game.—The American league registered its 12th victory against only 4 losses in the mid-season classic by defeating the senior circuit, 11 to 7, July 12, at Ebbets field in Brooklyn. Ralph Kiner and Stan Musial clouted home runs for the National league, but five errors led to the older loop's defeat.

Lou Boudreau of Cleveland managed the winners, while Billy Southworth of the Braves was at the helm for the losers.

The game was witnessed by 32,577 spectators, who contributed $79,255 to the players' pension fund.

World Series.—The Yankees chalked up their 12th world championship out of 16 postseason series in which they participated by defeating the Dodgers 4 games to 1.

Allie Reynolds hurled the Bombers to a 1 to 0 victory in the first game, which was decided in the ninth frame when Tommy Henrich, the first batter, clouted one of Don Newcombe's pitches for a home run. Reynolds yielded only two hits, while the Yanks solved Newcombe for five.

The following day, Elwin (Preacher) Roe, Brooklyn southpaw, turned the tables and blanked the Yankees 1 to 0, marking the first time in series history that the first two games resulted in 1 to 0 shutouts. The game was decided in the second inning when Jackie Robinson doubled off Vic Raschi, advanced to third after Gene Hermanski fouled to second baseman Gerry Coleman and scored as Gil Hodges singled.

The Bombers then swept the remaining three games. They won the third game, 4 to 3, highlighted by Johnny Mize's pinch-single with the bases loaded in the ninth inning; captured the fourth contest, 6 to 4, with Ed Lopat gaining credit for the triumph; and completed their conquest with a 10 to 6 victory in the final game.

Bobby Brown, Yankee third baseman, emerged as the hitting champion of the series with six hits, including two triples and a double. Duke Snider, Brooklyn outfielder, struck out eight times to match a record for a five-game series set by Rogers Hornsby of the Cubs in 1929.

The series drew 236,710 spectators with net receipts, exclusive of radio and television fees, amounting to $1,129,627.88. The commissioner's share was $169,444.17, while the clubs' and leagues' dividend amounted to $469,327.96. Players of the series contenders divided $490,855.75.

Attendance.—Although the Detroit Tigers, Boston Red Sox and St. Louis Cardinals established club records at the gate during the season, the major leagues suffered a decline of 595,855 in admissions from 1948.

The New York Yankees set the pace at the turnstiles with 2,321,302 paid, while the Indians, who drew a major league record total for 2,620,627 the previous season, attracted 2,233,871.

Following are the attendance figures for 1949, compared with those of 1948:

AMERICAN LEAGUE

Club	1949	1948	Change
New York	2,321,302	2,373,901	− 52,599
Cleveland	2,233,871	2,620,627	−386,756
Detroit	1,821,204	1,743,035	+ 78,169
Boston	1,596,650	1,558,798	+ 37,852
Chicago	939,494	777,844	+161,650
Philadelphia	816,514	945,076	−128,562
Washington	765,015	795,254	− 30,239
St. Louis	310,646	335,564	− 24,918
Totals	10,804,696	11,150,099	−345,403

NATIONAL LEAGUE

Club	1949	1948	Change
Brooklyn	1,635,237	1,398,967	+236,260
Pittsburgh	1,449,435	1,517,021	− 67,586
St. Louis	1,430,586	1,111,440	+319,146
New York	1,220,558	1,459,269	−238,711
Chicago	1,157,200	1,237,792	− 80,592
Boston	1,081,831	1,455,439	−373,608
Philadelphia	834,348	767,429	+ 66,919
Cincinnati	711,096	823,386	−112,290
Totals	9,520,291	9,770,743	−250,452
Major league totals	20,324,987	20,920,842	−595,855

Rules.—At the December meetings in New York, the controversial bonus rule was on the agenda for discussion. The American league voted to eliminate the rule and the National league to retain it. Commissioner Chandler voted with the American league. The minors had previously voted in Baltimore, Md., at the National association convention, to retain the rule. The action of the majors required resubmission of the question to the clubs of the National association.

Postseason Player Deals.—The year 1949 closed with some major trades in the middle of December. The St. Louis Cardinals traded Ron Northey and Lou Klein to the Cincinnati Reds for Harry Walker and a minor league player to be named. In a deal between the Boston Braves and the New York Giants, Alvin Dark and Eddie Stanky went to the New York club for Willard Marshall, Sid Gordon, Buddy Kerr and Sam Webb. White Sox player Edward Klieman was traded to the Philadelphia Athletics for Henry Majeski. The Detroit Tigers acquired Gerald Priddy from the St. Louis Browns, and Lou Kretlow went to the St. Louis club in the deal. The Philadelphia Athletics acquired Robert Dillinger from the St. Louis Browns, and the Chicago Cubs acquired William Voiselle from the Boston Braves.

The Minor Leagues.—A record total of 59 minor leagues operated in 1949 with every circuit that started the season still doing business at the finish and only a few clubs finding it necessary to withdraw from the field because of financial reasons. The 59 circuits played to 41,978,235 spectators during the season, marking the fourth consecutive year the minors had exceeded the previous season's gate. At the same time, more than 60 clubs set attendance records for their respective cities.

Minor league pennant and play-off winners for 1949 follow:

Class	League	Pennant winner	Play-off winner
AAA	American association	St. Paul (Minn.)	Indianapolis (Ind.)
	International	Buffalo (N.Y.)	Montreal (Que.)
	Pacific Coast	Hollywood (Calif.)	Hollywood
AA	Southern association	Nashville (Tenn.)	Nashville
	Texas	*Tulsa (Okla.)	Tulsa
A	Central	Dayton (O.)	Grand Rapids (Mich.)
	Eastern	Albany (N.Y.)	Binghamton (N.Y.)
	Sally	Macon (Ga.)	Macon
	Western	Lincoln (Neb.)	Pueblo (Colo.)
B	Big State	Wichita Falls (Tex.)	Waco (Tex.)
	Carolina	Danville (Va.)	Burlington (N.C.)
	Colonial	Bristol (Conn.)	Bristol
	Florida International	Havana (Cuba)	Tampa (Fla.)
	Inter-State	Allentown (Pa.)	Trenton (N.J.)
	New England	Pawtucket (R.I.)	Portland (Me.)
	Piedmont	Lynchburg (Va.)	Lynchburg
	Southeastern	Pensacola (Fla.)	Pensacola
	Three-I	Evansville (Ind.)	Davenport (Ia.)
	Tri-State	Florence (S.C.)	Florence
	Western International	Yakima (Wash.)	Vancouver (B.C.)
C	Arizona-Texas	Phoenix (Ariz.)	El Paso (Tex.)
	Border	Geneva (Wis.)	Geneva
	California	Bakersfield (Calif.)	San Jose (Calif.)
	Canadian-American	Quebec (Que.)	Quebec
	Central association	Burlington (Ia.)	Kewanee (Ill.)
	Cotton States	Greenwood (Miss.)	Natchez (Miss.)
	East Texas	Longview (Tex.)	Gladewater (Tex.)
	Evangeline	Houma (La.)	Hammond (La.)
	Mid-Atlantic	Johnstown (Pa.) (first half)	
		Erie (Pa.) (second half)	Erie
	Northern	Eau Claire (Wis.)	Aberdeen (S.D.)
	Pioneer	Twin Falls (Ida.)	Pocatello (Ida.)
	Sunset	Las Vegas (Nev.)	(no play-offs)
	Western association	St. Joseph (Mo.)	Joplin (Mo.)
	West Texas-New Mexico	Albuquerque (N.M.)	Albuquerque
D	Alabama State	Greenville (Ala.)	Andalusia (Ala.)
	Appalachian	Bluefield (W.Va.)	Bluefield
	Blue Ridge	Mount Airy (N.C.)	North Wilkesboro (N.C.)
	Coastal Plain	Rocky Mount (N.C.)	Greenville (N.C.)
	Eastern Shore	Easton (Md.)	Rehoboth Beach, Del.
	Far West	Pittsburg (Calif.)	Pittsburg
	Florida State	Gainesville (Fla.)	St. Augustine (Fla.)
	Georgia-Alabama	Newnan (Ga.)	Alexander City (Ala.)
	Georgia-Florida	Albany (Ga.)	Waycross (Ga.)
	Georgia State	Eastman (Ga.)	Tifton (Ga.)
	K-O-M	Independence (Mo.)	Independence
	Kitty	Owensboro (Ky.)	Madisonville (Ky.)
	Longhorn	Big Spring (Tex.)	Big Spring
	Miss.-Ohio Valley	Centralia (Ill.)	Paducah (Ky.)
	Mountain States	Harlan (Ky.)	Harlan
	North Atlantic	Stroudsburg (Pa.)	Stroudsburg
	North Carolina State	High Point-Thomasville (N.C.)	High Point-Thomasville
	Ohio-Indiana	Portsmouth (O.)	Marion (O.)
	Pony	Bradford (Pa.)	Bradford
	Rio Grande	Corpus Christi (Tex.)	Corpus Christi
	Sooner State	Pauls Valley (Okla.)	Lawton (Okla.)
	Tobacco State	Dunn-Erwin (N.C.)	Red Springs (N.C.)
	Virginia	Franklin (Va.)	Petersburg (Va.)
	Western Carolina	Newton-Conover (N.C.)	Rutherford(Spindale,N.C.)
	Wisconsin State	Oshkosh (Wis.)	(no play-offs)

*Play-off winner awarded pennant.

The 1949 interleague series champions were: Junior world series—Indianapolis (American association) 4, Montreal (International) 2; Dixie series—Nashville (Southern) 4, Tulsa

(Texas) 3; East Texas-Evangeline series—Gladewater (East Texas) 4, Hammond (Evangeline) 0; Little Dixie series—Pensacola (Southeastern) 4, Tampa (Florida International) 2; Georgia Alabama-Georgia Florida—Waycross (Georgia-Florida) 4, Alexander City (Georgia-Alabama) 1; Texas series—Corpus Christi (Rio Grande) 4, Big Spring (Longhorn) 1.

(A. B. Cr.)

Basketball.

The championship of the National Collegiate Athletic association was decided in 1949 when the University of Kentucky, Lexington, defending titleholder, defeated a hard-fighting band of Oklahoma Aggies (Oklahoma Agricultural and Mechanical college, Stillwater) by a score of 46–36, in a play-off for the crown at Seattle, Wash. Alex Groza, six-foot seven-inch centre, was the big gun of the winners' attack, tossing in 25 points before fouling out of the battle in the last five minutes of play. Third place went to the University of Illinois, Urbana, when it subdued Oregon State college, Corvallis, 57–53.

Kentucky had won the eastern regional eliminations by defeating Illinois at New York city's Madison Square Garden, while Oklahoma A. and M. was fighting its way through to the top at the expense of Oregon State in the western group trials.

In its drive to the title, Kentucky set or shared in seven new National Collegiate Athletic association records. They scored 85 points, 23 on foul shots, to set two single-game marks in their first-round clash with Villanova college, Villanova, Pa., and the 85–72 final score of that meeting represented the highest total ever made by two teams in one contest. Kentucky also amassed 207 points for three contests to establish a new standard.

Groza's 82 points, 31 field goals and 20 successful foul shots during the two eastern regional contests and the title play-off accounted for a trio of three-game records.

The University of San Francisco captured first prize in the annual National Invitation tournament after Kentucky suffered one of its few reversals of the season by bowing to Loyola university, Chicago, Ill., 67–56, in the quarter-final round. Kentucky continued its reign as champion of the Southeastern conference, sweeping to the title of that circuit for the sixth consecutive season.

Yale, paced by All-American Tony Lavelli, won the Eastern Intercollegiate league crown. Illinois led the Western (Big Nine) conference and Oregon State triumphed in the Pacific Coast conference. The first national Catholic invitation tournament, played at Denver, Colo., resulted in victory for Regis college of Denver, which set back St. Francis college, Brooklyn, N.Y., 51–47, in the title contest.

Other major college champions for the 1948–49 campaign included the following: Southern conference, North Carolina State; Missouri Valley, Oklahoma A. and M.; Southwest, Rice; Big Seven, Nebraska and Oklahoma tied; Big Six, Wyoming; National Association, Hamline; Negro, West Virginia State.

The domination of the Phillips "66" Oilers of Bartlesville, Okla., in national Amateur Athletic union competition came to an end after six years when the Oilers bowed to the powerful Bittners of Oakland, Calif., by a 55–51 count in the final of the annual championship held at Oklahoma City in March. Don Barksdale, Oakland Negro ace, paced his team to victory with 17 points.

Two Nashville, Tenn., teams battled it out for women's national A.A.U. laurels, the Goldblumes winning honours for the second season in a row when they conquered the Nashville Business college team, 35–17, in the final round of a six-day tournament at St. Joseph, Mo.

Professional court teams enjoyed a busy campaign, the Minneapolis Lakers defeating the Washington Capitols four games to two, in the final play-off series for honours in the Basketball Association of America. The Anderson Packers were crowned champions of the National league and the Wilkes-Barre (Pa.) Barons captured the title of the American league.

ACTION DURING final game of the National Invitation basketball tournament, between Loyola of Chicago and San Francisco university, played at New York city, March 19, 1949. San Francisco won the championship, 48 to 47

Representatives of the Basketball Association of America and the National league came together late in the summer of 1949 to end the heated battle between the two big professional circuits. Coming out of the parleys was a new National Basketball association composed of 18 quintets. The teams opened the new campaign in National and American divisions, with each division further broken down into Eastern and Western sections.

(T. V. H.)

Basutoland: *see* British South African Protectorates.
Bauxite: *see* Mineral and Metal Production and Prices.
Bechuanaland Protectorate: *see* British South African Protectorates.
Beef: *see* Meat.
Beer: *see* Brewing and Beer.

Belgian Colonial Empire.

The Belgian colonial empire consists of the colony of the Congo in central Africa and the adjacent trust territories of Ruanda and Urundi. The accompanying table gives material relative to all territories administered by Belgium. Total area: about 925,094 sq.mi. Total population (1949 est.): about 14,748,000. Chief towns (white population only, Dec. 1948 est.): Léopoldville (cap., 7,244); Elisabethville (6,240); Stanleyville (1,517); Costermansville (1,511). Governor general: Eugène Jungers.

Belgian Congo.—The prosperity enjoyed by Belgium's African colony after World War II showed no signs of diminishing in 1949; the year was one of consolidation, though there was, to begin with, a fall in the prices of oil-bearing products and fibres and later of mining products.

Belgian Colonial Empire

Country and Area (In sq.mi.)	Population (Feb. 28, 1949, est.)	Capital, Status and Governor	Principal Products (1948)	Foreign Trade (Francs '000) (Including Ruanda and Urundi)	Road, Rail and Waterways (Including Ruanda and Urundi)	Budget (Francs '000)
Belgian Congo, 904,974	Native: 10,914,208 White: 51,639* (Including 36,510 Belgians)	Léopoldville, colony. Governor General: Eugène Jungers	Diamonds 11,250,000 carats Gold 10,103 kg. (In metric tons) Copper 157,397 Tin (metal) 3,921 Zinc (concentrates) 112,822 Manganese ore 15,851 Uranium ore (1946) 6,200 Palm oil 110,387 Palm kernels 83,375 Gum copal 10,919 Cotton 51,224 Coffee 30,545 Cacao 2,220 Rubber 5,072 Timber 78,099 Quinine (7% content) 1,500	1948 Imports 8,383,140 (756,253 metric tons) Exports 10,817,465 (854,305 metric tons) (1949, six months) Imports 5,147,930 (443,310 metric tons) Exports 5,470,838 (396,677 metric tons)	Roads (1947): 100,524 km. Railways (1948): 4,747 km. Waterways (1948): 25,412 km. (including 12,284 km. for barges of 40 tons only) Motor vehicles (1947): Cars 5,389 Trucks 7,733 Tractors 167 Motorcycles 1,282 Bicycles 69,382	Belgian Congo (1948 actual) Rev. 3,703,894 Exp. 3,557,795 (1949 est.) Rev. 4,562,602 Exp. 4,460,764 *Index number of the cost of living* (July 1935=100) (July 1949=260)
Ruanda and Urundi, 20,120	(1948 est.) 3,782,000	Nianza (Ruanda), Kitega (Urundi), trust territory administered with Congo				Ruanda - Urundi (1948 actual) Rev. 200,458 Exp. 230,464 (1949 est.) Rev. 232,062 Exp. 347,504

*Including Ruanda and Urundi.

With a view to adapting the economy of the Belgian Congo to peacetime conditions and to consolidating results already achieved, a team of experts at Léopoldville under the chairmanship of the governor general, and another in Brussels under the chairmanship of Pierre Wigny, the minister for colonies, drew up a ten-year plan for economic and social development, allocating 25,000,000,000 fr. to public investment. Under the plan, which was published in June, the government would ask parliament each year to vote the necessary credits for the next 12 months, and this would afford the opportunity for checking the working of the plan and making any adjustments which might be required.

The ten-year plan was intended not only to improve the living standards of the Belgian Congo's 10,000,000 population whose essential needs were not yet satisfied, but also to create a domestic market hitherto lacking. To this end, the government was to pursue a policy of wage increases for natives which could be secured by developing output, conservation of crops and improving distribution and transport.

In the mining sector, since alluvial deposits were almost exhausted, new techniques were perfected for exploiting deep seams. In the agricultural domain greater mechanization, curing processes and the construction of silos were foreshadowed.

In all, the public authorities were to devote, for the welfare of the native population, 1,500,000,000 fr. for the agricultural program, 2,000,000,000 fr. for housing, 1,000,000,000 fr. for drinking water, 2,000,000,000 fr. for education and 2,000,000,000 fr. for technical instruction.

Also envisaged in the ten-year plan was intensive development of public works, including improvement of the road, railway and airway systems, of navigable waterways and of telecommunications, modernization of sea and river ports and the construction of wharves, hydroelectrical works, refrigerating plants, scientific laboratories, etc.

Operation of the agricultural provisions of the ten-year plan began on July 15, 1949, with the passing of an order for organizing native co-operatives.

Ruanda and Urundi.—The putting under trusteeship of the two territories, which since 1925 had been administered by Belgium, was approved by the Belgian parliament by the act of April 25, 1949. On April 11 the Mwamis (native rulers) of both Ruanda and Urundi had been appointed by decree of the regent ex officio members of the vice-governor general's council.

In order to encourage greater participation by the natives in the government of their country, the administrative authorities examined the question of creating an elected council which would have a legislative function.

Steps were taken towards the opening at Kisantu (Belgian Congo) in 1953 of a university accessible to the inhabitants of the protected territories; moreover, starting in 1955, university training was to be made available at Astrida, in the heart of Ruanda-Urundi.

Education.—(1948) State schools: elementary 5, pupils 3,464; technical 3, pupils 355; secondary 4, pupils 313. Subsidized schools: elementary 8,001, pupils 406,652; technical 36, pupils 1,328; teachers' training schools 39, pupils 2,471; secondary 12, pupils 959. Free (Catholic) schools: elementary 19,072, pupils 513,049; secondary 58, pupils 1,928.

FILMS OF 1949.—*African Fauna; African Tribes* (Paul Hoefler Productions); *A Journey to African Lakes; Wild Life in Africa* (Africa Films). (G-H. D.)

Belgian Congo: *see* BELGIAN COLONIAL EMPIRE.

Belgium.

A kingdom in western Europe, Belgium is bounded by France on the southwest, the Netherlands on the north and Germany and Luxembourg on the east. Area: 11,783 sq.mi. (this includes some small German frontier areas north of Aachen annexed on April 15, 1949. The six-power agreement of March 26, 1949, authorized Belgium to take over an area of about 10½ sq.mi. with a population of about 6,000 but it renounced its claim to three townships and incorporated only an area of 7½ sq.mi. with a population of barely 500). Pop. (Dec. 31, 1948, est.): 8,602,611. Chief towns (pop., Dec. 31, 1948, est.; first figure including suburbs, second figure commune only): Brussels (cap. 1,296,687; 185,112); Antwerp (chief port, 794,280; 266,636); Liége (573,176; 156,664); Charleroi (445,229; 26,262); Ghent (442,792; 166,797); Namur (215,069; 31,637); Bruges (200,850; 52,984). Languages (1930): Dutch, French and German. Religion: mainly Roman Catholic. Ruler: King Leopold III (*q.v.*); Prince Charles, regent; prime ministers in 1949: Paul-Henri Spaak (*q.v.*) and, from Aug. 10, Gaston Eyskens (*q.v.*).

History.—Increasing unemployment was the chief political and economic preoccupation at the beginning of 1949. On March 12 the number of unemployed totalled 261,000 against 122,000 in Sept. 1948. Production, however, continued at a high level and on the stock exchange prices showed no tendency to fall. Some proportion of the unemployment, therefore, apparently was attributable to a general regrouping of manpower necessitated by a return to normal industrial activity dominated by competition. Though the two parties in power—the Social Christian party and the Belgian Labour Socialist party—agreed on measures for dealing with the problem, they were unable to agree over the question of unemployment insurance payments. The Socialists insisted on new taxes; the finance minister, Gaston Eyskens (Social Christian), opposed this, considering that a policy of economy was the only possible course. The conflict remained latent for several weeks.

The Royal Question.—On April 25 the king and the Prince Regent Charles met at Berne, Switz., in the presence of Paul-Henri Spaak, the premier, and Henry Moreau de Melen, minister of justice, to discuss the political situation and the royal question. On May 3 Leopold sent his brother a letter insisting on the need to find a way out of the impasse, by a popular vote or some other constitutional means. "The country," he wrote, "must return to constitutionalism; the present abnormal situation cannot continue indefinitely." This was also the view of the Social Christian party. The party was still unable to persuade the Socialists to relinquish the idea of new taxation to pay for unemployment insurance, and a crisis was inevitable; on May 18 the regent signed a decree dissolving the parliament. In uneventful conditions parliamentary and provincial elections took place on June 26, when for the first time women went to the polls. In the chamber of representatives the Social Christian party out of 212 seats gained 105, the Liberals 29, the Socialists 66 and the Communist party 12.

In the senate the Social Christians secured an absolute majority with 92 seats.

On June 28 Spaak presented the resignation of his cabinet to the regent. First to be charged with the task of forming a new cabinet was Paul van Zeeland (Social Christian), who suggested a vote by the two houses in joint session to end the regency, in accordance with the act of July 19, 1945; but neither the Socialists nor the Liberals were prepared to support him in this. On July 6 the regent next entrusted Frans van Cauwelwaert (Social Christian), speaker of the chamber of representatives, with a mission of inquiry. Though this lasted a fortnight, it produced no concrete result. Finally, on July 23, the regent called on Gaston Eyskens (Social Christian), finance minister in the outgoing cabinet.

As the crisis threatened to continue, King Leopold on July 31 and Aug. 1 received a delegation from the Socialist party and on Aug. 2 and 3 from the Liberal and Social Christian parties. At the close of these conversations the king sent a message affirming his determination to comply with the will of the nation. "It is my express purpose," he declared, "to interpret the result of a possible referendum only in terms of the higher interests of the country. If I were led to believe that in reassuming my constitutional prerogatives I could not serve my country, I would abdicate in favour of my son, the crown prince."

UNEMPLOYED BELGIAN applying for relief during 1949 (*Stempellokaal*—on the dole). International Labour organization figures showed Belgian unemployment to have risen 153% during 1948–49

The political atmosphere having been thus clarified, the Liberal party agreed to take part in the government. Formed on Aug. 10, with nine Social Christians and eight Liberals, the Eyskens cabinet on Aug. 17 received a vote of confidence in the chamber of representatives by 125 votes to 64 with 1 abstention, and in the senate on Aug. 18 by 99 votes to 51 with 1 abstention. On Oct. 27, by 100 votes to 65, the senate approved a bill introduced by Paul Struye (Social Christian) for a national referendum on King Leopold's return. In the chamber of representatives the bill was approved on Dec. 13 by a special committee. The vote was 12 to 8, with 11 Social Christians and 1 Liberal in favour and 6 Socialists and 2 Liberals against.

The Economic Situation.—The economic position of Belgium was strengthened during the first nine months of 1949. This was evident from a rise of about 10% in stock exchange quotations and especially from the balance of foreign trade. Imports for the first seven months amounted to 46,900,000,000 fr. and exports to 49,000,000,000 fr.; that is, there was a balance of 2,100,000,000 fr. Industrial production, however, was affected by the unfavourable economic conditions in Europe, as shown by the index of industrial production (1936–38 = 100): from 123 in Jan. 1949 it rose to 132 in March but it fell to 105 in July. The coal-mining and metallurgical industries were those chiefly affected.

Tax revenues conformed with the estimates. Returns for the first seven months of the year were 28,400,000,000 fr. against an estimate of 28,500,000,000 fr. Compensation for this slight discrepancy was afforded by special taxes which exceeded the estimates, producing 2,700,000,000 fr. against an estimated 2,400,000,000 fr.

The Belgian franc was monetarily sound when there came devaluation of the pound sterling, followed by the devaluation of other western currencies. However, the Belgian government was obliged to bring the franc into line and raise the official exchange rate from 43.83 fr. to 50 fr. to the dollar, effective Sept. 22.

Foreign Policy.—The replacement of Paul-Henri Spaak by Paul van Zeeland in no way modified the broad lines of Belgian foreign policy which continued within the framework of the North Atlantic treaty and the Organization for European Economic Cooperation. Some check, however, to the realization of Benelux was given by the new minister of foreign affairs. At the conference of the three interested powers held at Luxembourg in October, Zeeland refused to ratify several paragraphs which had been initialled at The Hague by delegates appointed by Spaak and which were concerned with the unlimited acceptance of Dutch florins by Belgium and the country's withdrawal of the gold clause. The negotiations ended, however, with the signature on Oct. 15 of a protocol which, although not achieving the union contemplated, nevertheless extended the list of articles freed from licence and granted additional credits to the Netherlands.

Education.—(1947-48) Elementary: infant schools 4,175, pupils 249,023; primary schools 8,697, pupils 788,514; adult schools 211. Teachers' colleges: elementary 120, students 9,443; secondary 39, students 1,055. Secondary education, state: lower grade (*athénées*) 121, pupils 52,153; higher grade (*écoles moyennes*) 129, pupils 36,545; "free" (Catholic, 1945-46) 440, pupils 65,918. Technical schools (1947): pupils 226,290. Universities (1947-48): 4, institutions of higher education 16, students 17,933.

Finance and Banking.—Budget (1949 est.): revenue 69,472,000,000 fr., expenditure 71,584,000,000 fr. (at the end of 1949 the est. deficit approached 17,500,000,000 fr.). National debt (March 31, 1947) 258,200,000,000, fr. Currency circulation (Oct. 21, 1948) 81,555,000,000 fr., (Nov. 3, 1949) 87,361,000,000 fr. Gold reserve (Oct. 21, 1948) 28,326,000,000 fr., (Nov. 3, 1949) 31,551,000,000 fr. Savings and bank deposits (Dec. 1948) 65,900,000,000 fr., (Aug. 1, 1949) 69,800,000,000 fr. Monetary unit: Belgian franc with an exchange rate beginning Sept. 22, 1949, of 50 fr. to the U.S. dollar.

Foreign Trade.—(Belgo-Luxembourg Economic union) imports: (1948) 24,324,000 metric tons, value 72,931,000,000 fr.; exports: (1948) 12,583,000 metric tons valued at 61,767,000,000 fr.

Transport and Communications.—Roads (1948): 10,717 km. Licensed motor vehicles (1948): cars 179,230, trucks 125,739, motorcycles 108,641. Railways (1948): 4,956 km.; passenger traffic (1948 monthly average): 599,000,000 passenger-km.; freight traffic (1948 monthly average): 513,000,000 ton-km. Shipping (Jan. 1948): merchant vessels 78, total tonnage 248,298. Port of Antwerp (freight traffic in metric tons, 1948): imports 15,857,000; exports 10,912,000. Telephones (1948): subscribers 420,929. Wireless licences (1946): 798,023.

Agriculture and Fisheries.—Main crops (in metric tons, 1948): wheat 344,000, (1949) 450,000; barley 172,000; oats 385,000; rye 184,000, (1949) 192,000; potatoes 2,133,000. Production: sugar (raw value) 263,000; meat 220,800; milk 2,250,000; butter (1947) 25,000. Livestock (mid-1949): cattle 1,876,876; sheep 155,173; pigs 1,074,228; horses 267,373; poultry 8,609,135. Fisheries: total catch (1948): weight 64,440 metric tons; value 462,000,000 fr.

Industry.—Industrial establishments (Jan. 1948): 248,128; persons employed 1,000,010. Fuel and power (1948): coal 26,678,900 metric tons; gas 1,698,257,000 cu.m.; electricity 7,903,000,000 kw.hr. Raw materials (in metric tons, 1948): pig iron and ferroalloys 3,948,000; steel ingots and castings 3,912,000; copper 132,000; zinc 154,000; lead 66,000; tin 12,300; aluminum 2,300. Manufactured goods (in metric tons, 1948): cotton and rayon fabrics 62,659; woollen fabrics 19,386; linen fabrics 5,014; rayon fabrics 5,166. (G-H. D.)

Benefactions: *see* Donations and Bequests.

Benelux: *see* Belgium; European Union; Luxembourg; Netherlands.

Ben-Gurion, David (1886–), Israeli prime minister, was born at Płońsk, Poland, Oct. 16. He went to Palestine at the age of 20, worked as a winepresser, and was instrumental in organizing the Jewish *shomer*, or watchmen, guarding Jewish farms against Arab marauders. In 1912 he left for Istanbul, Turkey, where he matriculated in law. He returned to Palestine in 1918 as a member of the Jewish legion. After demobilization, he devoted himself to organizing the Histadruth, or General Federation of Jewish Labour, of which from 1921 he was secretary general. In 1930 he also became general secretary of the Jewish Labour party, and in 1935 was elected chairman of the Jewish agency. He became prime minister and minister of defense when the state of Israel was proclaimed in Tel Aviv on May 14, 1948.

After the adoption of the constitution and the formal election of Chaim Weizmann as president of the republic on Feb. 16, 1949, Ben-Gurion submitted the cabinet's resignation to the president, who charged him with the task of forming a new administration. In his policy statement Ben-Gurion declared that Israel would seek friendship with all peace-loving nations, particularly the U.S. and the U.S.S.R. In a speech on Oct. 29 he accused the Communists of causing labour unrest in Israel and of organizing anti-Zionist activities abroad. A struggle, he said, was being waged between the Socialist Zionists and the Communist anti-Zionist Jews: there could be no compromise. Israel must be built as a Jewish state or act as a foreign agency.

Benthoscope: *see* Marine Biology.

Benton, William (1900–), U.S. senator, was born on April 1 in Minneapolis, Minn. He was graduated from Yale university in 1921. In 1929, in partnership with Chester Bowles, he founded the advertising agency of Benton and Bowles.

Benton retired from the agency in 1936, and in 1937 became vice-president of the University of Chicago, on a part time basis. At his instance the university acquired Encyclopædia Britannica, Inc., in 1943. He financed the company, became chairman of its board and shared its ownership with the university. He launched Britannica into the classroom motion-picture field and served as chairman of Encyclopædia Britannica Films Inc.

During this period, in collaboration with Paul Hoffman, he helped to found the Committee for Economic Development, and he was active in inter-American affairs.

Benton was appointed U.S. assistant secretary of state by Pres. Harry S. Truman on Aug. 31, 1945, and served until Sept. 30, 1947. He developed the country's first peacetime program of international information and educational exchange and took responsibility for U.S. participation in the United Nations Educational, Scientific and Cultural organization. He resumed his duties at Britannica in Oct. 1947 and also became chairman of the Muzak corporation, which he had owned for some years, but continued his interest in international affairs and was chairman of the U.S. delegation at two international conferences thereafter.

In Dec. 1949 Benton was appointed U.S. senator from Connecticut, where he had lived for 17 yr., by Governor Bowles, to succeed Raymond E. Baldwin, who resigned from the senate effective Dec. 17, 1949.

Bequests, Philanthropic: *see* Donations and Bequests.

Beran, Josef (1888–), Czech ecclesiastic, was born at Plzeň, Dec. 29. He was educated at the pontifical university in Rome. He was rector of Prague Roman Catholic seminary, 1933–46, and was appointed professor of pastoral theology at the University of Prague in 1939. Arrested by the Germans in June 1942, he was sent to Dachau concentration camp, where he was liberated by the U.S. army in April 1945. In Nov. 1946 he was appointed archbishop of Prague and primate of Czechoslovakia. He was awarded the war cross first class, the highest Czechoslovak military decoration, by Pres. Eduard Beneš, and his prestige was such that when, on June 14, 1948, the Communist Klement Gottwald became president of the republic, he attended a solemn *Te Deum* in Monsignor Beran's St. Vitus cathedral. The archbishop recognized, however, that conflict between the church and the Communist regime was unavoidable, and the crisis came in June 1949, with the appointment by the government of a "supervisor" to occupy the consistorial office and administer church affairs. On June 18, preaching at Strahov monastery, the archbishop said: "If one day you learn of the conclusion of an agreement between the church and the state, you should know that I would never conclude an agreement which would infringe the rights of the church and of the bishops." On June 19 Communists created a disturbance during his Corpus Christi sermon at St. Vitus cathedral. From that day Archbishop Beran was virtually interned in his palace of Hradčany; visitors were not admitted and all correspondence, whether personal or official, was withheld or scrutinized.

Berlin. Capital of the German reich from 1871 to 1945, Berlin remained in 1949 the largest city of Germany. Area: 341 sq.mi. Pop.: (May 17, 1939, census) 4,332,242, (Oct. 29, 1946, census) 3,180,383 or 24.4% less. From June 6, 1945, to June 24, 1948, Berlin was administered by an inter-Allied governing authority (in Russian, *Kommandatura*) consisting of the commandants of the four sectors of Berlin. After June 24, 1948, when the soviet commandant proclaimed the dissolution of the *Kommandatura*, Berlin was in fact divided into two opposing administrations. The three western sectors (pop., mid-1949 est., *c.* 2,500,000) were under the authority of the three following Allied commandants: United States, Major General Maxwell D. Taylor (who on Aug. 6, 1949, was named to succeed Colonel Frank L. Howley); Great Britain, Major General G. K. Bourne (who on Jan. 22, 1949, succeeded Major General E. O. Herbert); France, General Jean Ganeval. In the soviet sector (pop., mid-1949 est., 900,000) the commandant was Major General Alexander G. Kotikov. There were also two rival German city governments and two lord mayors: Professor Ernst Reuter, appointed on Dec. 7, 1948, *Oberbürgermeister* by a city assembly elected by the population of the three western sectors; Friedrich Ebert, appointed on Nov. 30, 1948, provisional *Oberbürgermeister* of the soviet sector by a meeting summoned by the Communist S.E.D. (*Sozialistiche Einheitspartei Deutschlands*) party.

History.—After talks between the soviet and the U.S. representatives on the Security council of the U.N. the soviet government agreed on May 4, 1949, to reopen land traffic between the western zones and Berlin on condition that a four-power conference be held to discuss the problems of Germany and Austria as a whole. Thus the soviet blockade aimed at wresting the western sectors of Berlin from the control of the three western powers was abandoned after being maintained for 10½ months. During the whole period the 2,500,000 inhabitants of the western sectors had been supplied by the Anglo-American air lift which had flown 1,583,686 tons of supplies into Berlin by May 12, the date when the land blockade officially came to an end; 1,214,339 tons had been flown in by U.S. aircraft and 369,347 tons by British aircraft. The air lift did not cease immediately after the blockade was lifted, but was allowed to run down gradually over a period of 4½ months. By the time it ceased altogether (on Sept. 30) 2,323,738 tons of food, coal, machinery and other commodities had been flown into Berlin over a period of 15 months. The cost of the operation up to May 12 was $170,000,000.

BERLINER drinking wine out of a hat as the populace rejoiced over the lifting of the eleven-month blockade between east-west sectors of the city, May 12, 1949

With the lifting of the blockade living conditions in western Berlin became once more relatively normal. The shops filled with commodities of all sorts which flowed in chiefly from the western zones. Rationing of textiles and many other goods was abolished. Prices of vegetables dropped by as much as half. The supply of gas and electricity from the soviet zone was resumed.

And yet it soon became evident that western Berlin was faced—despite the lifting of the blockade—with a major economic crisis: a crisis of its producing industries.

West Berlin's industries suffered from a chronic lack of capital and of markets. The wholesale soviet dismantling in 1945 had left the factories with a high proportion of damaged or out-of-date plants; the confiscation of Rm. 5,000,000,000 in the Berlin banks had practically deprived the industries of capital; stocks of raw materials were almost used up during the blockade in the effort to keep the factories producing; and the lower value of the eastern mark, after the currency reform in 1948, gave soviet-sector and soviet-zone industries a big competitive advantage.

The result of this industrial crisis was twofold: the administration of west Berlin, the *Magistrat,* was faced with virtual bankruptcy in the shape of a budget deficit of Dm. 80,000,000 monthly. Unemployment rose from 40,000 at the beginning of the blockade (June 1948) to 100,000 in Oct. 1948 and 250,000 in Oct. 1949.

The western Allies and western Germany had sent much help to sustain western Berlin during and after the blockade, amounting by Oct. 1949 to Dm. 680,000,000 from G.A.R.I.O.A. (Government Appropriation and Releases in Aid of Occupied Areas) and Dm. 530,000,000 from the west German states. Nevertheless it was clear that a catastrophic situation would soon arise unless a great effort was made by the west German republic to put western Berlin industrially on its feet again. Leading west German politicians advocated the incorporation of west Berlin in the West German Federal republic as a twelfth state; but this proposal already embodied in article 23 of the west German constitution had been vetoed by the western Allied powers because it would have entailed widening the breach with the Soviet Union.

On Oct. 21, 1949, Fritz Schäffer, the minister of finance of the newly formed west German republic, announced a program of help for western Berlin: substantial credits and government contracts were promised including the payment of the budget deficit until the end of the financial year; private firms in the western zones, likely to place orders in Berlin, were to be encouraged by federal government guarantees; goods manufactured in Berlin and sold to western-zones buyers were to be exempted from certain indirect taxes; the supposedly lost banking accounts, the so-called *uralt Konten,* were to be revalued at 5%; a common west Berlin and western-zones banking system was to be introduced; and Berlin was to be an equal, if not favoured, partner with western Germany in receiving Marshall aid. Details in implementation of these proposals were to be worked out in Frankfurt and Bonn.

The so-called *modus vivendi* between east and west in Berlin, which had been agreed upon by the Council of Foreign Ministers (*q.v.*) in Paris in May and June, was complicated by a strike of the western-sector railwaymen who demanded to receive their wages in westmarks (May 21). The Berlin railways were administered by the eastern-sector authorities who paid the railwaymen in eastmarks which had only about one-sixth of the value of the western currency. The strike developed into a struggle between the Independent Trade Unions (U.G.O.) of the western sectors and the Communist-dominated Free German Trade Union federation (F.D.G.B.), in the course of which there was shooting and casualties. After intervention by the three western commandants the strike was brought to an end on the understanding that the east-sector railway authorities would pay 60% of the west-sector railwaymen's wages in westmarks and the west Berlin *Magistrat* would exchange the remaining 40% into eastmarks (June 26).

During 1949 the soviet sector of Berlin remained under the administration of the Communist-controlled east-sector *Magistrat.* Its industries were geared up to the soviet zone and enjoyed also a certain market in west Berlin at the expense of western-sector industries. When the so-called German Democratic republic was set up on Oct. 12 no attempt was made to incorporate into it the eastern sector of Berlin which—like the western sectors—remained outside the newly formed republics.

(D. A. Sn.)

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Films of 1949.—*Airlift to Berlin* (Flory Films, Inc.).

Bermuda.

Bermuda is a British colony of about 300 small islands in the western Atlantic. Area: 19 sq.mi. Pop. (1947 est.): 35,560 including 13,026 white. Chief towns: Hamilton (cap., pop. *c.* 3,000); St. George (*c.* 1,300). Governor in 1949: Lieut. Gen. Sir Alexander Hood.

History.—The Defense (Local Forces) act, which introduced peacetime conscription for the first time in the colony's history, was passed in 1949 by both houses of the legislature. Currency smuggling and a possible dollar "black market" aroused concern. Plans for an agricultural production and marketing scheme were introduced and approved. The return of the luxury liner "Queen of Bermuda" to its prewar role of tourist carrier provided a fillip to the tourist industry.

Finance and Trade.—Currency: based on sterling. Budget (1948): revenue £1,531,970; expenditure £1,531,762. Foreign trade (1948): imports £7,121,039; exports (visible) £955,406. Lilies form the only important domestic export and the economy of the colony is primarily dependent on the tourist industry, estimated to have been worth about £4,254,780 in trade to the colony in 1948. (Jo. A. Hn.)

Beryllium: *see* Mineral and Metal Production and Prices.

Best Sellers: *see* Book Publishing.

Betting and Gambling.

U.S. gambling in 1949 was marked by fads and crazes. Ten-cent chain letters, one-dollar "pyramid clubs," hundred-thousand-dollar puzzle contests, thousand-dollar merchandise lotteries—all caused brief sensations.

The post office had ruled the chain-letter scheme illegal, and the pyramid clubs were an effort to circumvent government disapproval by using the telephone instead. Each participant paid $1 and was promised an income of $2,048 when he reached the head of the list. Collections were made at a party to be given by the person at the head of the list. The craze spread throughout the country. State gambling laws were invoked without success, but the pyramid clubs soon collapsed under their own weight. There were not enough people to go around; if only one pyramid club had remained intact, at the end of 24 days it would have had to involve 268,000,000 persons.

The merchandise lotteries were an effort to promote sales through puzzle contests based on those legitimately conducted, and approved by the post office, to secure contributions to charitable organizations. Prizes up to $25,000 were offered. The postal authorities stopped most of the disreputable "contest" lotteries through fraud actions that led to consent decrees.

Among card games the principal craze was the game canasta (*q.v.*) but though it was by far the most popular new game of the year it was not widely used for gambling. Gin rummy remained the game played for the biggest stakes.

Betting on race horses fell more than 10% from the 1948 levels, so far as betting at the track was concerned. The 20 states permitting pari-mutuel betting on running races recorded a mutuel handle of $1,395,731,778, the sixth straight year that the figure had exceeded $1,000,000,000. An expert estimate made toward the end of the year set the total amount bet on running races at $8,000,000,000, the majority of which was bet by 2,000,000 regular bettors, though there were six times as many occasional bettors. The drop in pari-mutuel action might have been due to the fact that there were only 2,167 racing days in 1949 as against 2,457 in 1948. Pari-mutuel betting on harness racing increased to $205,216,832 in 1949 from $194,166,569 in 1948; this was legal in 12 states.

Despite efforts of the Thoroughbred Racing Protective bureau (T.R.P.B.), there was proof of skulduggery at race tracks. The practice of running "ringers" (fast horses entered under names of relatively slow ones) had been thought eliminated by the practice of tattooing each horse, but a series of articles by Michael MacDougall, a professional gambling investigator, exposed the continuance of such cases and the T.R.P.B. prosecuted and obtained confessions in three such cases; insiders, however, had already made a fortune by betting on the substituted horses. Milt Sosin, a reporter for the *Miami News* (Fla.), secured photographic evidence that a spectator at the Gulfstream track was signalling race results to confederates who then bet with bookmakers who had not yet received the results by telegraph; the spectator was not prosecuted but was merely barred from the track. In another case Detroit, Mich., police arrested a man using a radio telephone for the same purpose, and he paid a small fine.

The numbers racket, a form of lottery prevalent in large cities, flourished despite periodic clean-ups (as in Chicago in April and in New York in July), and despite widespread publicity that it was not honestly conducted.

The play in slot machines fell off. Louisiana, collecting a tax of $100 per machine, reported a decline in taxes from $1,041,429 in 1948 to $877,512 in 1949. An investigation by a commission for Gov. Earl Warren of California estimated a gross slot machine "take" of $4,000,000,000 throughout the United States, but other observers considered the figure high and thought that the actual loss of Americans to slot machines might run from one-tenth to one-quarter of that amount.

(A. H. Md.; M. Ml.)

Great Britain.—On Feb. 10, 1949, the prime minister announced the appointment of a Royal Commission on Betting, Lotteries and Gaming, under the chairmanship of H. U. Willink. The first public meeting was held in July. The outstanding fact revealed by evidence heard by the commission was that so little statistical information could be obtained or verified. The owners of the totalizators on racecourses and dog tracks were obliged by law to disclose their turnover, and it was possible to assess the amount spent on football pools. But nothing was known of the business carried on by the bookmakers. They operated in competition with the pools and totalizators, off and on the course, legally and illegally, and they were not obliged to publish accounts. The 1949 estimated figures for the three main spheres of betting were: totalizator at racecourses, £25,800,000; totalizator at dog tracks, £94,000,000; football pools, £64,000,000.

A voluntary organization called Everyman's Leisure, after two years of investigating, estimated a total of £300,000,000 as the annual turnover of the bookmakers. It is important to remember that a large part of this turnover goes back to the public. What proportion stays with the bookmakers is impossible to say. A figure of between 15% and 20% is usually deducted to cover expenses and to give a reasonable profit. The actual cost of the betting industry to the public was estimated at between £95,000,000–£100,000,000 a year. Everyman's Leisure also estimated the total labour force directly and indirectly connected with the betting industry in Great Britain as not less than 180,000 men and women.

Films of 1949.—*Card Shark* (Contemporary Films Inc.).

(H. C. La.)

Bevin, Ernest

(1881–), British foreign secretary, was born at Winsford, Somerset, Eng., March 9. He became national organizer of the Dockers' union in 1920, and the following year general secretary of the newly formed Transport and General Workers union. From 1925 to 1940 he was a member of the general council of the Trades Union congress and in 1937 was chairman. In May 1940 he became minister of labour in Winston Churchill's coalition government and entered the house of commons for central Wandsworth. He became secretary of state for foreign affairs in the Labour government in July 1945.

During 1949 Ernest Bevin travelled twice to the United States: for the signing on April 4 of the North Atlantic treaty and for the first meeting of the council set up under the treaty which met in Washington, D.C., on Sept. 17. After the signing in April he attended the adjourned United Nations general assembly at Lake Success, N.Y., and his visit in September began with Anglo-American-Canadian financial discussions in which he and Sir Stafford Cripps (*q.v.*) led the British delegation. On May 5 he signed the statute of the Council of Europe and in August attended the meetings of its committee of ministers at Strasbourg, France. He was present at the Council of Foreign Ministers which met in Paris from May 23 to June 20. He also attended meetings of the consultative council of the Brussels treaty powers—the meetings being held in each of the capitals of Great Britain, Belgium, France, Luxembourg and the Netherlands in turn—and in November again visited Paris for the committee of ministers of the Council of Europe and for a two-day conference on international affairs with Robert Schuman (France) and Dean Acheson (U.S.).

Bhutan.

A semi-independent state in the eastern Himalayas, Bhutan lies between Tibet and India. Area: *c.* 18,000 sq.mi. Pop. (est. 1948): 300,000. Language: a dialect of Tibetan. Religion: mainly Buddhist. Capital: Punakha. Ruler: Maharaja Jigme Wangchuk.

History.—The state of Bhutan acquired during 1949 some importance as a barrier against Chinese communism. As a result of negotiations started at New Delhi in April 1948 between K. P. S. Menon, secretary to the Indian minister of external affairs, and Debzunpon S. T. Dorji, head of the Bhutanese delegation, the Indian government concluded a new treaty with Bhutan which confirmed the old relationship, India agreeing to increase the annual subsidy from Rs. 200,000 to Rs. 500,000 (£37,500). The Bhutanese delegation had asked for Rs. 800,000.

(W. Bn.)

Foreign Trade.—Total trade with India (1948) was estimated at more than £65,000. Monetary unit: rupee.

Bicycling: *see* Cycling.

Bidault, Georges

(1899–), French prime minister, was born Oct. 5 at Moulins, France. He served in the French army during World War I from 1917 to 1919. After the war he resumed his studies at the Sorbonne university, graduating with high honours, and later taught history in secondary schools. In 1932 he and members of the Parti Démocrate Populaire, a new French version of the Christian Social movement, founded the newspaper *L'Aube*, with himself as foreign editor. Joining the army with the rank of sergeant at the outbreak of World War II, he was taken prisoner and held in Germany until 1941. On returning to France, he joined the underground movement and in 1943 became president of the Conseil National de Résistance. A fortnight after the liberation of Paris he was appointed foreign minister, Sept. 9, 1944, in Gen. Charles de Gaulle's provisional government. He retained this portfolio in all successive governments until July 19, 1948. He was also prime minister from June 19 to Nov. 28, 1946.

On Oct. 28, 1949, he was invested by the national assembly as prime minister by 367 votes to 183. Immediately afterward, he announced the formation of his coalition cabinet (the 6th of the fourth republic and the 11th since the liberation), thus bringing to an end the longest cabinet crisis that postwar France had known (*see* France).

Billiards.

Willie Hoppe captured his fifth world three-cushion championship in 1949. Hoppe, 61 years of age, defended his title in Chicago, Ill., in a round-robin tournament and reeled off six victories without a setback.

The other major billiards title, the world pocket championship, was taken by Jimmy Caras of Upper Darby, Pa. Caras, who held the title in 1936 and 1938, found the round-robin competition much keener than Hoppe did. He scored four victories and lost twice, while the runners-up, Willie Mosconi of Barrington, N.J., the defending titleholder, and Irving Crane of Binghamton, N.Y., finished with identical 3 to 3 records.

Before the world tourneys, national championships in both events were held at Chicago, with the top three qualifying for the world competition against the current titleholder. Joe

Chamaco of Mexico City captured the three-cushion crown and was joined in the world test against Hoppe by Dan McGoorty of Los Angeles, Calif., and Juan Navarra of Buenos Aires, Argentina, second and third, respectively.

The United States pocket billiards title went to Caras, with Crane second and Andrew Ponzi, of Philadelphia, third.

In the amateur field, Edward Lee of the New York Athletic club retained his national three-cushion title. In the national intercollegiate invitation tournament, Victor Brodsky of California captured the three-cushion championship while Leroy Kinman of Eastern Kentucky State Teachers college won the pocket billiards crown and Tom Hines of Wisconsin won the straight-rail diadem. (P. Br.)

Biochemistry.

Chemical Intermediates in Photosynthesis.—Notable progress was reported in 1949 in determining the intermediates in the chemical reactions by which the green plant under the influence of sunlight converts CO_2 and H_2O into O_2, sugar and other reduced carbon compounds. By growing plants in water which contained the O^{18} isotope biochemists showed that the primary conversion of energy brought about by light involves the photolysis of water with the production of O_2. The subsequent reduction of CO_2 takes place in the dark as well as in the light.

In order to elucidate the path of carbon, growing algae were allowed to photosynthesize in the presence of radioactive $C^{14}O_2$ for a limited time (five seconds to five minutes) and the reaction was stopped by dropping the plants into hot alcohol. The radioactive organic compounds which are progressively formed in increasing time intervals were identified by the newly developed methods of paper chromatography and radioautography. In these techniques substances are identified in terms of the distance which they migrate on a sheet of absorbent paper under the influence of a spreading solvent, and the positions of radioactive substances are determined by the darkened locations of an X-ray film subsequently placed in contact with the absorbent paper.

The first compound into which the radioactive CO_2 is fixed was found to be 2-phosphoglycerate; after five seconds at room temperature, four more compounds were found, 3-phosphoglycerate, malate, aspartate and phosphopyruvate. After 30 to 90 sec. there were many additional compounds of which 15 were identified including sucrose, the first free sugar, several amino acids, alanine, serine and glycine, glycolate and the phosphates of fructose and glucose. These compounds all contain 2, 3, 4 or 6 carbons in a chain. By selective degradation, the position of the radioactive carbons in several compounds was determined, and detailed mechanisms were worked out for the progressive entrance of CO_2 into increasing fractions of several molecules. Thus in sucrose, the radioactivity is found first in the middle carbons 3 and 4 of the hexose chain, later in carbons 2 and 5 and finally also in carbons 1 and 6.

The first photosynthetic reaction is thought to be the condensation of CO_2 with some reactive 2-carbon phosphorus-containing intermediate, probably vinyl-phosphate, to form 2-phosphoglyceric acid. After conversion to phosphopyruvic acid, another molecule of CO_2 is added to form the 4-carbon oxalacetic acid, from which other 4-carbon compounds are formed, malic, aspartic, succinic and fumaric acids. One of these is thought to be split to form two 2-carbon intermediates, from which the 2-carbon vinyl-phosphate is regenerated to start the cycle over again. The hexose chain is thought to be formed by a reversal of the well-defined glycolytic cycle, the condensation of two triose-phosphates to form fructose-diphosphate.

Efficiency of Photosynthesis.—Experiments were reported which show that no more than four quanta (possibly only three) of red light, or a maximum of $4 \times 44{,}000 = 176{,}000$ calories of light energy, are required to produce 1 mole of oxygen gas equivalent to about 112,000 calories. This makes the efficiency of energy transformation at least 65%. (For 3 quanta the efficiency would be 85%.) This refuted a prevailing view based on numerous experiments, that at least 10 quanta are required for each mole of O_2, which would mean an efficiency of less than 25%, and confirmed a claim originally made for the higher efficiency by Otto Warburg in 1923. The high efficiencies were realized by illuminating a *Chlorella* suspension with white light of such intensity that photosynthesis just balanced respiration, and no net oxygen was evolved. While this state was maintained a measured amount of red light was admitted, and the increased oxygen corresponding to this red light was precisely measured.

Vitamin B_{12}.—A beginning was made toward the elucidation of the structure of vitamin B_{12}. Elementary analysis showed about 4.5% cobalt, and the approximate empirical formula $C_{63}H_{90}N_{14}O_{13}PCo$. Boiling point of methyl alcohol solutions showed a molecular weight of about 1,400. Identification of some of the products of degradation by acid hydrolysis revealed the presence of 5,6-dimethylbenzamidazol $C_9H_{10}N_2$, and 2-aminopropanol C_3H_9ON. Thus about one-fifth of the molecule was accounted for. The compound does not yield amino acids on hydrolysis.

The observation that thymidine and other desoxyribosides can replace vitamin B_{12} in the nutrition of several micro-organisms, led to study of the therapeutic value of thymidine in Addisonian pernicious anaemia. Thymidine caused increases in reticulocyte count but not a rise in red cell count. Thymidine was found also to be without significant enhancing effect on the small increases in red cell count observed with inadequate doses (0.25 mg. daily instead of the 1 mg. usually required) of vitamin B_{12}.

Inhibition of Tumour Growth by a Purine Analogue.—Following the observation that the micro-organism *Tetrahymena geleii* requires purines, and especially guanine, it was found that a modified purine, in which the NCN sequence of the five-membered ring of guanine is replaced by NNN, is a powerful competitive inhibitor for guanine in the growth of this micro-organism. The name triazole is used to designate this type of compound and the guanine derivative is called guanazolo. The inhibition index was 0.075, which means that 13 to 14 molecules of guanine are required to overcome the inhibition of 1 molecule of guanazolo. Normal mammalian cells have the capacity to synthesize their own guanine requirement. It was thought that if tumour cells are deficient in this capacity, then the administration of guanazolo, which emphasizes a guanine deficiency, might have a selective action in inhibiting the growth of tumour tissue, without interfering with normal growth. Repeated administration of guanazolo to mice over a three-day period did not have toxic effect. When 0.5 mg. of guanazolo was injected subcutaneously twice daily into mice with adenocarcinoma, a definite inhibition of the tumour growth was observed. Tumour size was reduced from 11 ml. size in the controls which received injections of saline, to 1 ml. size in the guanazolo treated animals, where it remained stationary for 20 days while the guanazolo was continued. When the guanazolo injections were stopped, the tumours promptly resumed growth. Similar observations were made on spontaneous mammary cancer in mice, and in mouse lymphoid leukemia. In the latter condition, guanazolo caused a definite decrease in white blood cell count, in the percentage of lymphoblasts and in the number of palpable tumour masses, as compared with control untreated mice. (*See* also PHYSIOLOGY; VITAMINS.)

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Biography: *see* American Literature; English Literature; Obituaries; and, in their alphabetical positions, biographies of living persons.

Biology: *see* Anthropology; Botany; Genetics; Marine Biology; Physiology; Zoology.

Birth Control.

At a national conference in New York on population trends and the family sponsored by the National Research council's Committee on Human Reproduction, two major problems were considered: (1) the urgent need to develop through research a simple, inexpensive and universally acceptable contraceptive and (2) the equally urgent need to build world-wide public acceptance of the necessity for family limitation and for use of contraceptive measures to reach this objective. Scientists themselves needed to be alerted to the need for research in the field of human reproduction; few of them in 1949 were qualified to carry on such research. The conference also discussed the problems of infertility; increased knowledge in this area might lead to discovery of new factors involved in fertility control.

Birth control was officially adopted in Japan during the year. The new law was passed unanimously in the house of representatives and backed by a large house of councillors majority. According to a statement issued by the Japanese Welfare ministry "an overwhelming majority of the Japanese people favour birth control as a solution of health and overpopulation."

The first meeting of the committee established by the 1948 International Congress on Population and World Resources in Relation to the Family was held in London. It was attended by delegates from the Planned Parenthood organizations from the United States, Great Britain, Sweden and the Netherlands. They adopted as their name the International Committee on Planned Parenthood.

Awards.—The fifth annual Albert D. and Mary Lasker Foundation Awards in Planned Parenthood went to George M. Cooper, head of the Division of Preventive Medicine, North Carolina State Board of Health, and to Carl G. Hartman, zoologist, formerly with The Johns Hopkins Medical school. Cooper was honoured for his leadership in establishing birth control in 1937 in the public health service of North Carolina, the first state to give this service through its public health departments. By 1949 the example had been followed by six other states. Hartman received his award for scientific research in the physiology and time of ovulation in women and the survival time of egg and sperm which brought nearer the solution of basic problems in the field of fertility and infertility.

U.S. Goals.—The Planned Parenthood federation's annual meeting devoted a major part of its discussion to program goals. The membership expressed its aim "to further universal acceptance of family planning as an essential element of responsible parenthood and stable family life," this program to be accomplished through three main lines of activity—service, education and research. The inclusion of birth control services in public health clinics, hospitals and as an integral part of national health planning was considered a service goal with continued maintenance of the federation's own services until availability of complete coverage for U.S. families. The provision of general and professional education by the federation was recognized as the method for achieving this end.

The Planned Parenthood federation was in 1949 the national agency and clearinghouse for 15 state leagues and 131 local committees. Birth control clinics numbered 537. These services were in 229 public health departments, 48 hospitals, 227 extramural clinics and there were 33 referral services. Of the 92 infertility clinics reported to the federation, 25 were under Planned Parenthood auspices. (M. Sr.)

Birth Statistics.

The indications provided by records for the first nine months show that the birth rate in the United States during 1949 remained practically at the level for 1948, when it was 24.2 per 1,000 total population. The number of recorded births for 1948 was 3,535,068; an allowance for unrecorded births raises this total to an estimate of 3,702,000. Canada, likewise, had about the same birth rate in 1949 as in 1948 according to provisional data for the first eight months of each year. There were, altogether, 347,222 births recorded in Canada during 1948 with a birth rate of 27.0 per 1,000 population. Data for the great towns of England and Wales for the first nine months of 1949 point to a decrease of about 5% in the birth rate of that country from the year before, 1948, namely 17.9 per 1,000. In the latter year, Australia had a birth rate of 23.1 per 1,000 and New Zealand (excluding the Maoris) a rate of 25.5 per 1,000. Each of the foregoing countries had their postwar peak in the birth rate in 1947. Many other countries had a similar experience in that their birth rate for 1948 fell below the peak for 1947. Among them were: Austria, Belgium, Czechoslovakia, Denmark, France, Ireland, Italy, Mexico, Netherlands, Norway, Sweden and Switzerland.

In the United States, the birth rate during 1947 (the latest year with complete data) was 25.5 per 1,000 among white persons and 28.2 per 1,000 among nonwhites. These rates, which are compared in Table I with corresponding rates for 1940, show that over this seven-year period, the white population experienced an increase of 45.7% while the nonwhite population had a gain of only 30%. The greatest rise in the birth rate from 1940 to 1947 occurred among the urban white population (56.8%), while the rural white and both the urban and rural nonwhite segments showed increases near 35%. As a result of these changes, for the white population of 1947, the urban birth rate was higher than the rural rate, a situation not usual in the United States.

The data in Table I also point to a sharp increase in the proportion of births occurring in hospitals in the United States, from 55.8% in 1940 to 84.8% in 1947. The rural area, starting from a much lower level in 1940, had only 71.3% of its births hospitalized in 1947, as compared with 93.8% for urban centers. The situation in 1947 still was rather poor among the nonwhite population, with only 49.7% of its births hospitalized, compared with 89.3% for the white population.

Birth rates by age of mother and order of child at birth, separately for the white and nonwhite populations of the United States in 1947, are shown in Table II, together with comparable figures for both whites and nonwhites combined in 1940. At ages 15 to 19, nonwhite females experienced, in 1947, a birth rate

Table I.—***Birth Rates per 1,000 Population and Per Cent of Live Births Occurring in Hospitals; United States, 1947, Urban and Rural by Race***

Race and residence	Birth rate per 1,000			Per cent of live births occurring in hospitals		
	1947	1940	Per cent increase since 1940	1947	1940	Increase since 1940
Total	25.8	17.9	44.1	84.8	55.8	29.0
Urban	26.4	17.1	54.4	93.8	76.0	17.8
Rural	25.5	19.1	33.5	71.3	32.3	39.0
White	25.5	17.5	45.7	89.3	59.9	29.4
Urban	26.5	16.9	56.8	96.1	—	—
Rural	24.7	18.4	34.2	78.8	—	—
Nonwhite	28.2	21.7	30.0	49.7	26.7	23.0
Urban	25.4	19.2	32.3	73.7	—	—
Rural	32.7	24.1	35.7	21.9	—	—

Table II.—*Births per 1,000 Females of Stated Ages According to Race and Order at Birth, 1947, Compared with 1940*

	1947		Both Races		
Age and order at birth	White	Nonwhite	1947	1940	Per cent change since 1940
		Births per 1,000 females of stated age			
10–14	0.3	4.1	0.8	0.6	+33.3
15–19	68.6	134.2	76.7	48.9	+56.9
20–24	200.0	201.6	200.1	125.0	+60.1
25–29	176.6	137.9	172.3	114.1	+51.0
30–34	110.2	85.8	107.5	77.1	+39.4
35–39	57.0	59.7	57.3	41.8	+37.1
40–44	15.7	17.8	15.9	13.9	+14.4
45–49	1.1	2.0	1.2	1.3	− 7.7
		Births of stated order per 1,000 females of ages 15–44			
First	46.5	34.3	45.1	27.0	+67.0
Second	29.8	23.1	29.0	18.4	+57.6
Third	14.8	15.0	14.8	10.1	+46.5
Fourth.	7.1	10.4	7.5	5.8	+29.3
Fifth	3.8	7.5	4.2	3.7	+13.5
Sixth and seventh . .	3.6	9.6	4.3	4.2	+ 2.4
Eighth and over. . .	2.6	9.6	3.3	3.7	−10.8

practically double that for white females, but at ages 20 to 24 the two groups had almost identical rates, namely 200 per 1,000. Although white females had substantially higher rates than nonwhite females at ages 25 to 34, the situation was reversed beginning with age 35. These age differences are reflected in the birth rates according to order of the child, shown at the bottom of Table II. Here the rates for the first and second child were greater for white women than for nonwhite women; for third children, the two groups were at almost the same level; while for fourth and higher orders, the nonwhites had the greater rates.

It is evident, from the right side of Table II, that the rise in the birth rate since 1940 was concentrated among young women under 30 having their first or second child. Thus, at ages 15 to 19, the birth rate rose by 57%, at ages 20 to 24 by 60% and at ages 25 to 29 by 51%; the higher ages showed increases of less than 40%. Likewise, the birth rates for first and second children rose by about 60% from 1940 to 1947, while the higher orders showed large, but not so great, relative increases.

A thorough analysis of the factors influencing the past trend of the birth rate in England and Wales is contained in the *Report by the Royal Commission on Population* (H.M. Stationery Office, London, Cmd. 7695, June 1949). It is stated there that the past fall in the birth rate is almost wholly a result of planned family limitation. An important finding was that the average size of a family remained fairly stable through the years 1929–49, which included a period of depression and a period of war prosperity and emotion. The future prospects, according to this report, would be influenced by the marriage rate and the average size of the family. The report is also noteworthy for its description of a new method for forecasting the population of a country. A detailed analysis of fertility in Canada, based principally upon the census of 1941, is contained in "The Changing Size of the Family in Canada," by Enid Charles (Dominion Bureau of Statistics, Ottawa, Ont., 1948). On the basis of trends of birth and death rates during 1921 to 1939, it was estimated that the population of Canada may reach a total of about 15,000,000 near the end of the 20th century. (*See* also CENSUS DATA, U.S.)

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Bismuth: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Bizonia: *see* GERMANY.

Blind, Education of the. Most European and Asiatic schools for the blind were still suffering in 1949 from the effects of World War II. The struggle for existence had postponed progress in re-establishing and expanding their programs.

Britain's National Institute for the Blind enlarged its highly successful system of education for the blind by establishing Condover hall, a school for blind children having additional handicaps.

During 1949, 5,340 children in the United States attended 52 residential schools for the blind, and 592 pupils were in 26 public-school braille classes. The United States congress again appropriated $125,000 to the American Printing House for the Blind at Louisville, Ky. These funds were to help provide braille books, talking books, reproducers and tangible apparatus for blind children in residential schools and classes for the blind.

There were approximately 9,000 children in the United States with vision so impaired that it was necessary for them to attend special sight-saving classes. Although 631 such classes helped conserve the remaining sight of these children, the National Society for the Prevention of Blindness estimated that there were still about 50,000 additional children with serious visual handicaps struggling along as best they could in regular classes for the sighted.

An international conference of workers for the blind, also attended by representatives of the United Nations and U.N.E.S.C.O., met at Merton college, Oxford, England, from Aug. 3 to 13, 1949. Its theme was "The Place of the Blind in the Modern World." This resolution was passed: "To enable blind persons to participate fully in the life of the community and to contribute to its strength, blind persons, whether children, young persons, or adults, should be given full opportunity for general and vocational education in schools adequately equipped for the education of the blind and with fully qualified teachers." A committee was formed having power to convene an international conference of educators of the blind in 1951.

Another significant event in the education of the blind was the U.N.E.S.C.O.-sponsored meeting of international authorities on braille. This conference, held at Paris, France, Dec. 15 to 21, was the initial step toward solving the complex problems of unifying world braille.

Just prior to 1949 there had been a decreasing number of blind children in residential schools. The lowering incidence of total blindness allowed many of the larger schools for the blind to enrol partially sighted children—particularly those from rural areas. In 1949 the American Printing House for the Blind further developed a large type printing program providing ink print books in 18 and 24 point type for the partially sighted.

Massachusetts, New York and New Jersey reported an increase of blindness in children resulting primarily from retrolental fibroplasia (a growth of fibrous tissue behind the crystalline lens of the eye), which occurs most often in infants born prematurely. Because of this, several schools saw a change from decreasing to increasing enrolments.

For many years the National Library for the Blind in England had held braille reading contests. On Jan. 29, 1949, the American Foundation for the Blind, Inc., New York city, held the first such contest in the United States. Fifty-seven blind people from 12 states participated. This competition was so successful that it was decided to have yearly regional and national competitions.

Braille reading does not permit "looking ahead"; therefore, to increase reading speed the code is contracted. During recent years this contracted form had been introduced to blind first graders in some schools. In 1949 approximately half of the residential schools were using the contracted braille system in the lower grades. Reading results were encouraging, but it was estimated that it would take five more years to evaluate this educational experiment.

The great need for trained teachers of the deaf-blind prompted the Perkins Institution and Massachusetts School for the Blind, Watertown, Mass., and the American Foundation for the Blind to sponsor the first specific course designed to meet the problems of the double handicap. This was begun in the summer of 1949 at the Horace H. Rackham School of Special Education, Michigan State Normal College, Ypsilanti, Mich.

The Radio Engineering institute of Omaha, Neb., a school that trains blind men to repair and service radios, started a new class in 1949 called "Electrical Appliance Repair and Motor Rewinding." This school had demonstrated that when blind people are properly trained and educated they can compete successfully in a sighted world.

The University of Chicago and the Hadley Correspondence School for the Blind completed the brailling of the university's introductory course in psychology. This marked the fourth college level course especially prepared and taught by the University of Chicago for the Hadley Correspondence School for the Blind of Winnetka, Ill. (D. C. N.)

Blood Plasma: *see* MEDICINE.
Blue Cross: *see* INSURANCE.

Bolivia.

A land-locked republic in south central South America, Bolivia has an area of 416,040 sq.mi. and a population (1948 est.) of 3,922,000. The legal capital is Sucre (est. pop. 1946, 32,000); the actual seat of government is La Paz (est. pop., 301,000). Other major cities (with pop. estimates) include Cochabamba (80,000), Oruro (50,000), Potosí (40,000), Santa Cruz (32,800) and Tarija (27,000). Racial distribution is estimated to be 52.34% Indian, 27.5% mestizo, 13.08% white, 0.22% Negro and 6.85% unspecified. Religion is predominantly Roman Catholic. Presidents in 1949: Enrique Hertzog, until May 7; Mamerto Urriolagoitia, acting president May 7–Oct 19, thereafter constitutional president.

History.—Political tension and violence, intimately linked with mounting labour unrest at the tin mines, characterized the Bolivian scene during 1949. The government was bitterly opposed by the leftist Partido de la Izquierda Revolucionaria (P.I.R.) and the rightist Movimiento Nacionalista Revolucionario (M.N.R.), both organizations being engaged in rivalry for political leadership of the miners' unions. President Hertzog declared a state of siege on Feb. 20, when the government unearthed a revolutionary plot sponsored by the M.N.R. After the congressional election of May 1, which gave the administration's Republican Socialist Union party a majority of the seats in the national legislature, Hertzog, pleading reasons of health, requested a leave of absence. He was replaced on May 7 by Acting President Urriolagoitia.

Urriolagoitia decided in May to deport Sen. Juan Lechin and 19 other M.N.R. leaders because of M.N.R.-led agitation among workers at the Catavi and Siglo Viente tin mines. On May 28, unions at both mines staged a strike in protest against the deportation order. The stoppage was characterized by violent disorders at Catavi, where two U.S. mining engineers and about 50 Bolivian miners lost their lives. The government proclaimed a state of siege on May 31, issued a general mobilization call and outlawed the opposition parties M.N.R. and P.I.R. and also the Communist party. The strike became general on June 1, when an estimated 8,000 organized factory and railroad workers walked out in sympathy with the miners, and grew until it involved some 27,000 organized workers. At length, on June 8, representatives of the government and the unions agreed to terminate the stoppage, the settlement calling for a reduction in the military forces stationed at the tin mines and the repatriation of Lechin and other M.N.R. leaders.

An uneasy truce was broken on Aug. 27, when rebels led by the M.N.R. seized the cities of Cochabamba, Santa Cruz, Potosí, Oruro and Sucre. The revolt spread until the insurgents could claim on Sept. 1 that they controlled 2,000 troops and the western third of the country, embracing approximately 125,000 sq.mi. and a population of about 500,000. The bulk of the army remained loyal to the government, however, and by Sept. 3 loyalist forces had recaptured all major rebel strongholds except Sucre, Potosí and Santa Cruz. Sucre and Potosí fell to the loyalists on Sept. 4, and the insurgents abandoned Santa Cruz on Sept. 13. Acting President Urriolagoitia announced nine days later that the revolt had been crushed and that "the country has now returned to normality."

Hertzog, his health broken, submitted his formal resignation from the presidency to congress on Oct. 19. (G. I. B.)

Education.—Bolivia in 1944 had 1,513 rural schools with 110,000 pupils and 1,740 elementary schools with 144,056 pupils. Secondary education was furnished by 55 colleges (27 public and 28 private) with 17,496 students. There were universities with more than one faculty at Cochabamba, La Paz, Oruro, Potosí and Sucre.

Finance.—The monetary unit is the boliviano, valued at $0.0236 U.S. currency, controlled rate, and at $0.0089, curb rate, on Dec. 5, 1949. The 1949 budget estimated government revenue at 1,794,684,120 bolivianos and expenditure at 2,046,017,632 bolivianos. Actual revenue in 1947 was 1,012,000,000 bolivianos and actual expenditure 1,310,000,000 bolivianos. Revenue was derived chiefly from export duties on minerals. The internal debt of national, departmental and municipal governments and autonomous institutions totalled 1,925,572,661 bolivianos on Nov. 30, 1948 (Dec. 31, 1947: 1,346,854,252 bolivianos). The external debt was $60,280,923 on Dec. 31, 1947, plus arrears of interest totalling $74,244,100. Notes in circulation on Sept. 30, 1949, totalled 2,253,000,000 bolivianos; the gold reserve of the Central bank was $22,800,000.

Trade and Communications.—Exports in 1948 totalled $123,400,000; imports were $67,400,000. Exports, which consisted almost entirely of minerals, included tin (65%) and silver (4%). Principal customers were the U.S. (57%) and the United Kingdom (39%); principal suppliers were the U.S. (52%) and Peru (9%).

Railway lines in operation (1945) totalled 1,612 mi. Several lines were under construction in 1949. The highway system (1945) consisted of 8,938 mi. of road, of which 621 mi. were improved. About 7,300 motor vehicles were in operation in 1947. The national air line, Lloyd Aereo Boliviano, carried 45,426 passengers and 9,003 short tons of cargo in 1947. Service was also supplied by Panagra, Braniff Airways, Linea Aerea Nacional (Chile) and the Bolivian air force. There were 7,800 telephones and 75,000 radios in 1947.

Agriculture.—Bolivia continued to be dependent on imports of foodstuffs, pending the development of the isolated eastern lowlands. Important crops included maize, barley, wheat, rice and potatoes. Livestock (1946) included an estimated 3,039,000 cattle, 4,289,000 sheep and 1,809,000 goats. The principal exploited forest products were rubber (exports 1947 2,503 short tons) and cinchona bark.

Manufactures.—Production figures in 1947: cotton goods 11,535,000 yd.; shawls, blankets and cashmeres 1,020,000 yd.; cement 42,800 short tons; flour 38,000 short tons; and cigarettes 3,487,000 packages. The cost-of-living index for La Paz stood at 765 in May 1949 (1937=100).

Mineral Production.—Mining is Bolivia's chief industry and tin is the dominant factor in the nation's economy. Mineral exports in 1948 were reported as follows: tin 41,816 short tons; lead 28,230 short tons; silver 259 short tons; gold 4,050 troy oz.; zinc 23,285 short tons; antimony 13,514 short tons; and wolfram (WO_3 content) 1,644 short tons. Production of crude petroleum totalled about 450,000 bbl.

Bombing: *see* AVIATION, MILITARY; MUNITIONS OF WAR.
Bonaire: *see* NETHERLANDS ANTILLES.
Bonds: *see* STOCKS AND BONDS.

Book-Collecting and Book Sales.

Sales of book collections in Great Britain and the United States in 1949 were fairly pedestrian. A notable exception was the auction in New York, N.Y., of the Fritz Kreisler collection of early printed books and manuscripts which realized $120,272. The net proceeds were given to the Golden Rule foundation and the Lenox Hill hospital (New York) as a tribute to the musician's wife.

The highest auction price for a single piece was $54,000, paid (Parke-Bernet galleries, Inc., New York, April 27) for the Bliss copy of *Lincoln's Gettysburg Address*. Purchaser of the manuscript was Oscar B. Cintas of Havana, Cuba. Four other copies of the *Address* are known: two in the Library of Congress, one in the Illinois State Historical library, one in Cornell university library, Ithaca, N.Y. This last was presented to the library in

June by Nicholas H. Noyes of Indianapolis, Ind.

It was announced that Mark Twain's private papers, including unpublished manuscripts, would be given to the University of California as a legacy by the author's only surviving issue, Mrs. Jacques Samossoud. Another important collection, the papers of James Boswell, gathered by Col. Ralph H. Isham, was acquired by Yale university libraries, New Haven, Conn., as a partial gift and would serve as the basis for the definitive edition of Boswell's writings. The Olive Branch Petition, the appeal addressed to King George III by the American Colonies in an effort to resolve the differences that brought on the American Revolution, was presented to the New York Public library by Lucius Wilmerding.

On March 31 a group met in New York and established the Antiquarian Booksellers Association of America. Regional chapters were established or projected in Los Angeles, Calif., New York city, Philadelphia, Pa., Chicago, Ill., and Boston, Mass.

Devaluation of the pound seemed to have failed to increase trade between U.S. and British dealers. In the United States it was believed by many that since British prices were based on the dollar there could be small revisions in pricing. With devaluation, some British dealers revised prices upward.

Austrian dealers reported that, whereas formerly it had been possible to secure rare books in exchange for black-market staples, such trading had disappeared as a result of 1948 monetary reforms. Favoured by the newly decreed freedom of trade, the antiquarian book business in western Germany showed stability, although east-to-west trade continued difficult. Leipzig, traditional book centre of Germany, was considered lost by western Germans who set out to establish a new centre in the west. Switzerland, which had enjoyed an increase in business representing that portion formerly executed by German dealers, reported a falling off as the German trade was re-established. In general, European dealers discovered that as living conditions improved they were able to buy fewer rarities from private owners.

The Cambridge Bibliographical society (England) issued the first of its *Transactions.* In the United States the Bibliographical society of the University of Virginia, Charlottesville, Va., issued its first volume of *Papers;* a second volume was published in December. Other bibliographical publications: *Collecting First Editions of Franklin D. Roosevelt* by Ernest J. Halter; *The Voice of the Old Frontier* by R. W. G. Vail; *Bibliography of Booth Tarkington* by Dorothy R. Russo and Thelma L. Sullivan; *Seventeenth Century Maryland* by Elizabeth Baer; *Donn Byrne: A Bibliography* by Winthrop Wetherbee, Jr.; *Auction Record of the Limited Editions Club Publications* by Irving Lew. (J. Bk.)

Book Publishing. Title production by book publishers in the United States in 1949 showed the highest total since 1941. The largest net increase over the preceding year was in the category of sociology and economics, followed by books on science, business, biography and domestic economy. The only net decreases appeared in the fields of music, and domestic and military subjects. The number of fiction titles was virtually the same for 1949 as for 1948 (a net increase of one), but there were fewer new titles and more new editions in 1949. The five leading publishing houses of the year were: Macmillan (517); Doubleday (with Blue Ribbon Books, Garden City, Halcyon House, Permabooks, Sun Dial Press and Triangle Books) (404); McGraw-Hill (with Gregg Publishing Co. and Whittlesey House) (290); Harper (with Hoeber) (285); and Oxford University Press (272).

Best Sellers.—Based on trade sales alone, the list of fictional best sellers for 1949 was headed by *The Egyptian,* a novel laid in ancient Egypt and translated from the Finnish of Mika Waltari. This was followed by Lloyd C. Douglas' *The Big Fisherman,* which moved from first place in 1948 to second place in 1949. In third place came Sholem Asch's *Mary,* followed, in that order, by *A Rage to Live* by John O'Hara; *Point of No Return* by John P. Marquand; *Dinner at Antoine's* by Frances Parkinson Keyes; *High Towers* by Thomas B. Costain; *Cutlass Empire* by Van Wyck Mason; *Pride's Castle* by Frank Yerby; and *Father of the Bride* by Edward Streeter.

Fictional best sellers, arranged by total sales including those through the book clubs, were approximately as follows: *Dinner at Antoine's, Pride's Castle, High Towers, The Golden Fury* (Marian J. Castle), *Lord Johnnie* (Leslie T. White), *Bride of Fortune* (Harnett T. Kane), *Cutlass Empire, The Chain* (Paul I. Wellman), *Never Dies the Dream* (Margaret D. Landon), *Let Love Come Last* (Janet Taylor Caldwell), *Twilight on the Floods* (Marguerite Steen), *Point of No Return, The Egyptian* and *Father of the Bride.*

First on the list of nonfiction best sellers, rated by trade sales alone, was *White Collar Zoo* by Clare Barnes, Jr., a series of animal photos humorously captioned to relate them to familiar office types and office situations. Its immediate success brought a sequel in *Home Sweet Zoo* (by the same author), which appeared in Dec. 1949 and sold enough copies by the close of the year to place it fourth on the list of nonfiction best sellers. In second, seventh and eighth place came three books on canasta (*q.v.*), namely, *How to Win at Canasta* by Oswald Jacoby; *Canasta, The Argentine Rummy Game* by Ottilie H. Reilly and Alexander Rosa; and *Canasta* by Josefina Artayeta de Viel. In third place was Thomas Merton's *The Seven Storey Mountain;* fifth came *Cheaper by the Dozen* by Frank B. Gilbreth, Jr. and Ernestine Gilbreth Carey; sixth, *The Greatest Story Ever Told* by Fulton Oursler; ninth, *Peace of Soul* by Fulton J. Sheen; and tenth, *A Guide to Confident Living* by Norman Vincent Peale (this also ranked in tenth place in 1948).

Listed by total sales including book club sales, the best-selling nonfiction titles were approximately: *Cheaper by the Dozen, The Greatest Story Ever Told, White Collar Zoo, How to Win at Canasta, Their Finest Hour* (Winston S. Churchill), *The Seven Storey Mountain, Modern Arms and Free Men* (Vannevar Bush), *The Mature Mind* (H. A. Overstreet), *Home Sweet Zoo* and *This I Remember* (Eleanor Roosevelt).

Although nonfiction sales through the book stores were larger in 1949 than fiction sales, five of the ten nonfiction best sellers were nonreading books: *i.e., White Collar Zoo* and *Home Sweet Zoo,* which were picture books, and the three instruction books on how to play canasta. Continuing a trend noticeable in 1948, books with a religious or biblical turn accounted for two of the

Publication of Books in the U.S.

International classification	1949			1948			Net change
	New books	New editions	Total	New books	New editions	Total	
Agriculture, gardening	139	52	191	108	54	162	+29
Biography	526	69	595	460	53	513	+82
Business	226	80	306	156	67	223	+83
Domestic economy	195	68	263	131	52	183	+80
Education	228	26	254	171	28	199	+55
Fiction	1,019	625	1,644	1,102	541	1,643	+1
Fine Arts	299	48	347	295	41	336	+11
Games, sports	190	45	235	162	37	199	+36
General literature & criticism	453	82	535	411	62	473	+62
Geography, travel	199	49	248	167	47	214	+34
History	443	84	527	432	71	503	+24
Juvenile	846	133	979	844	85	929	+50
Law	192	75	267	164	67	231	+36
Medicine, hygiene	287	163	450	235	198	433	+17
Music	78	17	95	86	18	104	−9
Philology	108	58	166	108	41	149	+17
Philosophy, ethics	244	81	325	248	60	308	+17
Poetry, drama	508	66	574	504	59	563	+11
Religion, theology	636	84	720	621	56	677	+43
Science	473	203	676	412	180	592	+84
Sociology, economics	474	74	548	388	73	461	+87
Technical & military books	310	145	455	344	122	466	−11
Miscellaneous	387	105	492	258	78	336	+156
Total	8,460	2,432	10,892	7,807	2,090	9,897	+995

THREE PHOTOGRAPHS from *White Collar Zoo* by Clare Barnes, Jr., a collection of zoological portraits selected for their "resemblance to office types" and office life, and published in 1949. Captions, left to right, read: (1) " 'Do you *really* like it? It was marked 'way down.' " (2) "An elderly clerk." (3) " 'You tell him *this* for him and his rush jobs!' "

fiction, and four of the nonfiction best sellers of the year. (X.)

Great Britain.—In Great Britain 1949 was the year in which book publishing was restored to its normal appearance. On March 6 the rationing of paper for books (introduced on March 3, 1940) came to an end. Paper rationing, however, had ceased to be a real problem for the vast majority of publishers, all of whom were more concerned with steadily mounting manufacturing costs. Publishers had to base the selling price of a book on the number of copies they could reasonably hope to sell in relation to the costs of manufacture. During the years of book shortages every publisher knew that he would sell practically every copy of every title he could manufacture. By 1949, however, there was no shortage of books, and the element of risk once again occupied its important place in publishers' calculations.

Despite all this, the publishing business continued quarter by quarter to beat all previous records. The amount of trade done by publishers in 1948 reached the unprecedented figure of £33,241,431. During the first six months of 1949, publishers' total sales amounted to £15,849,367, an increase by more than £400,000 on the turnover during the corresponding period of 1948. Since book trade business is invariably greater during the second half of the year than in the first, there was little doubt that the 1949 total would surpass the 1948 record.

The production of books in Great Britain during 1949 was 17,034 titles, of which 5,110 were reprints and new editions. The total was very little short of the figure for the record year 1937 (17,134 titles).

The amount of export business done by British publishers in 1948 was £8,739,236, or 26.3% of the total. The largest overseas market for British publishers, Australia, was worth considerably more than £1,500,000 in 1949.

Europe.—During the year official reports from eastern Europe claimed that book production was flourishing. The Czechoslovak Publishing act, passed in March 1949, invested in the ministry of information and public culture full powers to plan and direct book publishing and bookselling.

Tax barriers, import restrictions, etc., remained formidable in Europe. The removal of some of these barriers was one of the principal concerns of the United Nations Educational, Scientific and Cultural organization, and the Cultural conference of the European movement, held at Lausanne, Switz., in Dec. 1949, declared that it was "vital to the well-being of Europe that all such restrictions should be swept away." (*See* also AMERICAN LITERATURE; ENGLISH LITERATURE; etc.) (E. SE.)

Books: *see* BOOK PUBLISHING; CHILDREN'S BOOKS; *see* also under AMERICAN LITERATURE; ENGLISH LITERATURE; FRENCH LITERATURE; etc.

Borneo: *see* BRITISH BORNEO; NETHERLANDS OVERSEAS TERRITORIES.

Boston,

capital of Massachusetts and the ninth largest city in the United States, had a population of 770,816 by the 1940 federal census and a land area of 43.9 sq.mi.

Two major developments occurred at the municipal election on Nov. 8, 1949. Mayor James M. Curley, seeking re-election to a fifth term, was defeated by City Clerk John B. Hynes, who in 1947 had served as temporary mayor during the five months imprisonment of Curley. Hynes' plurality was 11,930 votes. By a vote of 146,162 to 73,882 (with 80,450 blanks) the city council was changed from a ward council of 22 members to a council of 9 elected at large, and run off primaries were provided at all subsequent elections for the offices of mayor, council and school committee. The first election under this revised setup was scheduled to be held in Nov. 1951.

By legislative action, title to the rapid transit subways and tunnels originally constructed by the city was transferred to the Metropolitan Transit authority, with the city receiving bonds of the Metropolitan Transit district (13 municipalities serviced by Metropolitan Transit authority) in an amount equivalent to the difference between the total subway debt outstanding and the total sinking funds in the possession of the city. This transaction resulted in a reduction of roughly $40,000,000 in the net debt of the city. Existing sinking funds were to be used in so far as possible to meet principal and interest payments on the outstanding subway debt; and, whenever necessary, the city would receive from the district the cash necessary to satisfy subway principal and interest requirements in full at the date of maturity.

The Boston Housing authority spent approximately $28,703,-

000 of state and city funds on public housing. This program involved 4,010 dwelling units, of which 1,044 were completed during 1949; 1,261 were under construction; and 1,705 had plans and specifications ready.

Boston's low sky line was altered during the year by the erection of two skyscrapers, the John Hancock Insurance building and the New England Telephone and Telegraph Exchange building.

The 1949 tax rate was $56.80 (1949—$53.40) on an assessed valuation (real and personal) of $1,601,431,500, an increase of $19,437,500 over the previous year. Budgets were as follows: city and county, $81,917,682.80, an increase of $11,000,000 over 1948; schools, $25,724,444.34, an increase of $3,200,000. A principal factor in budget increases was a general salary increase of $300 granted all employees as of July 1. (C. J. Fx.)

Botany. A number of meetings of interest to botanists were held during 1949. The seventh Pacific Science congress was held in New Zealand in February, and an international symposium on morphogenesis was held in Strasbourg, France, in July. The 112th annual meeting of the British Association for the Advancement of Science was held in northern England in September. In December the Botanical Society of America met in New York city in conjunction with the American Association for the Advancement of Science. During the year plans for the International Botanical congress to be held in Stockholm, Sweden, in July 1950 were made under the chairmanship of Carl Skottsberg of Göteborg, Sweden.

Important advances were made in many fields of botanical research during the year. The newer techniques, employing radiocarbon, the electron microscope and ultrasonic vibrations were widely used. E. H. Newcomer and R. Wallace reported that ultrasonic vibrations produce chromatid breaks and other nuclear aberrations, and that the use of such a technique gives promise of becoming a useful tool in the study of chromosome structure and cell mechanics. A preliminary investigation of chromosomes and genes with the electron microscope was made by D. C. Pease and R. F. Baker. Although plant materials were not employed in their studies, the conclusion of these investigators that certain definite particles seen with the electron microscope may be genes is of great interest to the botanist. W. F. Libby, E. C. Anderson and J. R. Arnold reported the use of radiocarbon in age determinations of plant remains. The new method affords an opportunity of actually dating carbon-bearing material less than 35,000 yr. old and would be of significant use to the botanist and anthropologist in dating plant remains associated with prehistoric cultures. The use of radioactive carbon continued to play an important role in studies of photosynthesis. M. Calvin and A. A. Benson, in tracing the path of carbon in photosynthesis, showed that the first free carbohydrate to appear in plants is sucrose.

Another important work on photosynthesis appeared during 1949. Dean Burk, S. Hendricks, M. Korzenovsky, V. Schocken and O. Warburg reported that under favourable conditions 65% of absorbed light energy can be transformed into chemical energy by green cells. Previous investigators had concluded that there was only a very low efficiency of energy transformation during photosynthesis.

Two important discoveries relating to the origin and early distribution of corn (*Zea mays*) were brought to light in 1949. A primitive type of maize discovered in central New Mexico in 1948 by C. E. Smith constituted another important link toward the solution of the puzzle of the origin of corn, according to P. C. Mangelsdorf. Mangelsdorf and Smith concluded that this find furnishes additional proof that corn is not derived from teosinte. C. R. Stonor and Edgar Anderson analyzed primitive types of corn from Assam, Asia, and pointed out that the corn of this remote region is similar to certain prehistoric types from South America. They suggested the possibility of transpacific transport by man in pre-Columbian times to explain the similarity.

An important contribution to mycology during the year was the work of L. S. Olive, who showed that in the Ascomycete, *Patella melaloma*, brachymeiosis (two reductional divisions) and double fertilization does not occur as had previously been reported for Ascomycetes by Helen Gwynne-Vaughan. Also during the year a new antibiotic with great potentialities was discovered. S. A. Waksman and H. A. Lechevalier announced the isolation of neomycin from *Streptomyces fradiae*. Neomycin is active against streptomycin-resistant bacteria including tuberculosis organisms.

Other important contributions published during the year include C. W. Wardlaw's experimental study of phyllotaxis and organogenesis in ferns; F. Galán's study of sex inheritance in *Ecballium;* F. W. Went's physiological and ecological studies on desert plants; the discovery of a new group of plant growth regulating chemicals, the N-aryl phthalamic acids, by O. L. Hoffman and A. E. Smith; and the demonstration of a new method to show differentiation between pentose and desoxypentose nucleic acid in sectioned material by the use of cold perchloric acid by R. O. Erickson, K. B. Sax and M. Ogur.

A number of honours befell to botanists in 1949. Carl Skottsberg was elected an honorary member of the Royal Society of Edinburgh. David Fairchild was elected as a foreign member of the Linnean society of London; R. L. Praeger and A. H. Uggla were elected as associates; and F. E. Fritsch was chosen president for 1949–50. P. R. Burkholder, Max Delbrück, and Kenneth Raper were elected to the National Academy of Sciences of the United States and Ö. Winge was elected as a foreign associate. (*See* also BIOCHEMISTRY; GENETICS; PALAEONTOLOGY.)

New journals in 1949: *Experimental Cell Research* (International Society for Cell Biology).

New books: *Introgressive Hybridization*, by Edgar Anderson; *Survey of Biological Progress*, vol. 1, edited by G. S. Avery, Jr.; *Field Manual of Plant Ecology*, by F. C. Gates; *Vernalization and Photoperiodism; a Symposium*, by A. E. Murneek, *et al.*; *Chemistry and Physiology of Growth*, edited by A. K. Parpart; *Bibliography of Cultivated Trees and Shrubs Hardy in the Cooler Temperate Regions of the Northern Hemisphere*, by Alfred Rehder; *Liberty Hyde Bailey, a Story of American Plant Sciences*, by A. D. Rodgers; *Les Champignons parasites des plantes cultivées*, by Georges Viennot-Bourgin; *Growth in Relation to Differentiation and Morphogenesis* (Symposium of the Society of Experimental Biology, No. II). A list of proposed changes in the international rules of botanical nomenclature was published in *Brittonia* under the editorship of W. H. Camp, H. W. Rickett and C. A. Weatherby.

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FILMS OF 1949.—*Love in Bloom* (Artkino Pictures, Inc.); *Seasonal Changes in Trees* (Coronet Instructional Films). (C. B. HR.)

Arboretums and Botanical Gardens.—The Los Angeles State and County arboretum at Arcadia, Calif., was established in 1949. It is a 117-ac. tract, formerly known as Rancho Santa Anita. Temporary buildings were erected to house the library and administration offices.

A new arboretum was initiated by the park department of Spokane, Wash. A tract of nearly 100 ac. was set aside for this purpose.

Various organizations in Denver, Colo., were working to have an area of one of the city parks set aside for arboretum purposes. The tract under consideration included nearly 100 ac. of park land between the Museum of Natural History and the Zoological garden.

No major changes occurred in the larger arboretums and botanical gardens of North America during the year, but the Lexington Botanic garden at Lexington, Mass., was being discontinued because of lack of operating funds. (*See* also HORTICULTURE.) (D. WN.)

At the Royal Botanic gardens, Kew, England, J. Hutchinson retired from the keepership of the museums after 44 years' service at Kew. He was succeeded by Dr. F. N. Howes. Work in the herbarium returned to, or even exceeded, prewar quantity and quality and the *Kew Bulletin,* no. 1, 1949, reported that more than 35,000 specimens were received during 1948.

In South Africa continued efforts were made for the preservation of the rarer members of the native flora and a large collection of these were grown in the National Botanic gardens at Kirstenbosch, Cape Province.

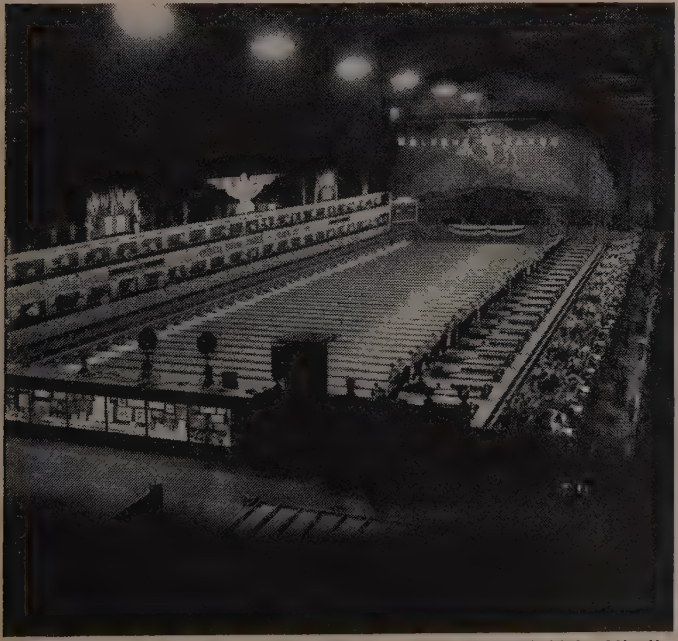
A number of notable plants flowered during 1949 in the Edinburgh Botanic garden, and a further part of the revision of the "Series of Rhododendron" was prepared by the assistant keeper, Dr. J. Macqueen Cowan, and H. H. Davidian and published in the *Rhododendron Year Book,* no. 3, 1949, of the Royal Horticultural society. This section dealt with the Campanulatum and Fulvum series.

In Berlin, progress was made in the reconstruction of the botanical garden and museum at Dahle under the directorship of R. Pilger. (P. M. SY.)

Bowling.

More than 30,000 persons competed for $375,000 in prizes in the annual tournament of the American Bowling congress at Convention hall, Atlantic City, N.J. The all-events title went to John Small of Chicago, Ill., who tallied 1,941. Bernard Rusche of St. Bernard, O., scored 716 for first place in the singles. Doubles honours were won by Donald Van Boxel, Green Bay, Wis., and Gene Bernhardt, Sturgeon Bay, Wis., with 1,332. Jimmie Smith's South Bend, Ind., quintet composed of John Nemeth, Harold Kelly, Harley Luckey, Joe Czigany and Pete Tatman bowled 3,027 for five-man team laurels.

Victors in the Women's International Bowling congress championships held at Columbus, O., were Cecilia Winandy, Chicago, all-events; Clara Mataya, St. Louis, Mo., singles; Ann Elyasevich and Estelle Svoboda, Chicago, doubles; and the Enterprise Gears of Detroit, Mich., team.



OPENING OF the 46th annual American Bowling congress held in Atlantic City, N.J., in the spring of 1949

James (Junie) McMahon, Chicago bowling instructor, succeeded Connie Schwoegler of Madison, Wis., as national match-game king at Chicago in December. McMahon took the big prize of $2,000 with a final standing of 44½ won, 19½ lost, 214.16 average and 318.37 points, under the Peterson scoring system. Ralph Smith, Los Angeles, Calif., was second in the 64-game round-robin grind with 307.17 tallies. Schwoegler finished seventh with 293.48 points.

Marion Ladewig, a bowling instructress from Grand Rapids, Mich., won the women's match-game championship with an average of 201. (T. V. H.)

Bowls: *see* LAWN BOWLING.

Boxing.

The retirement of Joe Louis as undefeated world heavyweight champion; the decision of Mike Jacobs of the Twentieth Century Sporting club to retire himself and his organization because of his ill health, with the consequential launching of a greater monopoly than even Jacobs enjoyed; the growing strength of a Managers' guild in New York city; and a continued recession in box-office receipts—these were outstanding developments in boxing through the year 1949.

At the close of the year there were reports in circulation that Louis was considering a return to the ring in an attempt to lift the sport out of the dim financial strata to which it had sunk.

Louis retired on March 1 in a formal announcement to the National Boxing association issued from Miami, Fla. He gave up the title after the longest and busiest reign of any champion the ring had ever known, irrespective of division. For more than 12 yr. Louis was the ring's ruler. He defended the title 25 times.

Louis retired by agreement with the International Boxing Club, Inc., of which James D. Norris, Chicago, Ill., was president. With a monopoly on boxing arenas in New York, N.Y., Chicago, Ill., and Detroit, Mich., and working agreements with St. Louis, Mo., and other cities, this organization began its career early in May, wielding more influence than Jacobs and his Twentieth Century Sporting club. Part of the agreement was that Louis was to be made a director of the International Boxing Club, Inc.

Forthwith Louis associated himself with a boxing promotion which brought to Ezzard Charles, Cincinnati, O., Negro, partial recognition as successor to the heavyweight title. Charles won a 15-round decision over Jersey Joe Walcott, Camden, N.J., Negro, at Chicago, June 22, in a bout recognized by the National Boxing association as a championship affair. It was unrecognized either by the New York State Athletic commission or the British Boxing Board of Control.

This absence of unanimity created a situation which paralleled that existing when Gene Tunney surrendered the title, undefeated, in 1928. Nevertheless, Charles went seriously about the business of clearing title to his claim to the championship, by knocking out Gus Lesnevich in a bout in New York city (unrecognized as a championship contest) and knocking out Pat Valentino in a title match at San Francisco, Calif.

The greatest indication of the change in gate receipts was found in the fact that the year's top box-office total, registered at the Charles-Walcott June fight, was only $281,546. The high for 1948 was $841,739, when Louis knocked out Walcott in their second bout. Charles attracted a gate of $167,870, Oct. 14, when he knocked out Valentino in eight rounds. The gate for the bout in which Charles knocked out Lesnevich in seven rounds at the Yankee stadium, New York city, Aug. 10, was $75,832.

EZZARD CHARLES missing with a high-swinging left aimed at Jersey Joe Walcott (Arnold Raymond Cream, Jr.) during their 15-round title bout for the world heavyweight championship in Chicago, Ill., June 22, 1949. Charles won by a decision

Receipts fell off alarmingly in New York city, customarily the hub of the nation's boxing. No show in Madison Square Garden attracted a gate of $100,000, a situation encountered for the first time in eight years. The International Boxing Club, Inc., conducted three outdoor shows in New York city, and all three fell short of $150,000 in receipts. Indoor boxing in Madison Square Garden attracted receipts of $810,139 for 22 shows attracting 230,152 persons. The number of shows was reduced because of an undeclared "strike" by the Boxing Managers' guild of New York city, which was settled in late spring. The difficulty arose over the effect of television on boxing. The managers maintained that video reduced attendances, that their boxers' pay suffered accordingly and settled the "strike" only when a satisfactory financial cut of the video money was made.

During 1949, 12 championship bouts were held, including Charles' bout with Gus Lesnevich. There were 18 deaths, 9 of them in the U.S., which caused alarm and led to increased safety measures. A dearth of material contributed further to lack of interest.

Conspicuously missing from championship activity was a test for the world light-heavyweight title held by Freddie Mills of England. Middleweight title activity was attended with dramatic developments. Jake La Motta, the Bronx, New York city, dethroned Marcel Cerdan, Casablanca, Morocco, as champion, at Detroit, June 16, getting credit for a ten-round knockout victory when Cerdan was unable to come up for the tenth round, claiming an injured left shoulder. They were matched for a return title bout Sept. 28, but this was postponed until Dec. 2 when La Motta developed an arm injury in training. Flying to the U.S. for the Dec. 2 engagement, Cerdan perished in a plane crash in the Azores, Oct. 28.

Ray Robinson, world welterweight champion, retained his title in a single defense against Kid Gavilan, Cuban, in Philadelphia, Pa. Ike Williams defended his lightweight championship against Enrique Bolanos, Mexico City, Mexico, in Los Angeles, Calif., and Freddie Dawson, Chicago Negro, in Philadelphia.

Willie Pep regained his world featherweight title in a February encounter with Sandy Saddler, Harlem Negro, and defended the championship against Eddie Compo at Waterbury, Conn. Manuel Ortiz, El Centro, Calif., retained his world bantamweight title against Dado Marino, Hawaiian, in Honolulu, Hawaii, and in two defenses Rinty Monaghan, Belfast, Northern Ireland, held the world flyweight title by beating Maurice Sandeyron, France, and holding Terry Allen, London, England, to a draw.

Amateur Athletic union activity attained international scope in promotion, and college boxing experienced a stimulus which contrasted sharply with the decline in the professional sport. (J. P. D.)

Great Britain.—A remarkable feature of boxing at the end of 1949 was that Bruce Woodcock, the British heavyweight champion, despite a much chequered career and suspect nervous reflexes, was regarded by the authoritative New York State Athletic commission as one of three contenders for the vacant world championship. The New York body declared the title vacant after the retirement of Joe Louis and refused to alter their attitude although the American National Boxing association, to which all other states are affiliated, accepted the Negro, Ezzard Charles, as Louis' successor by virtue of his victory over Louis' old opponent, Jersey Joe Walcott, in a fight Louis himself promoted. The N.Y.S.A.C. would only recognize Charles as champion if he beat the winner of the contest Woodcock *v.* Lee Savold, arranged for May 1950. After knocking out the South African, Johnny Ralph, early in 1949, Woodcock successfully defended his British title against Freddie Mills in June 1949.

Mills, who was the world champion light heavyweight, had an inactive year in 1949. His only important fight was against Woodcock, to whom he conceded more than 14 lb. in weight and much in height and reach. Dick Turpin, verging on 30, withstood the challenge for the British middleweight championship but seemed unable to make further headway. The British welterweight championship changed hands when Eddie Thomas defeated Henry Hall in an uneven fight. Billy Thompson, who fought rather unevenly, remained the British lightweight champion but lost the European title and failed to regain the Empire title in 1949. Rinty Monaghan retained the world flyweight championship in his native Belfast by virtue of a draw with Terry Allen.

FILMS OF 1949.—*The Big Fight* (Columbia University). (L. WD.)

Boyd-Orr, John Boyd Orr, 1ST BARON, of Brechin Mearn, in the county of Angus (1880–), British scientist and authority on nutrition, was born at Kilmaurs, Ayrshire, Sept. 23. He became director of animal nutrition research at Aberdeen university in 1914 and in 1929 founded and directed the Imperial Bureau of Animal Nutrition. He was made rector of Glasgow university in 1945 and chancellor in 1946. On Oct. 27, 1945, he was unanimously elected director general of the Food and Agriculture organization of the United Nations for a two-year term ending Dec. 31, 1947. In 1949 he visited India at the invitation of the Indian government to advise on food problems. His proposals, which were accepted and implemented by the Indian government, were that the production and distribution of food should be organized on a war basis. In Oct. 1949 the Nobel committee of the Norwegian parliament announced that he was to receive the Nobel peace prize for 1949. Following the usual practice the reasons for the award of the peace prize were not made public, but it was believed that it was given both for his work as director general of the Food and Agriculture organization and also as president of the world movement for a world federal government. A barony was conferred on him on Jan. 1, 1949.

Boy Scouts.

Boy Scout anniversary week, which is observed annually in February in the United States, was an outstanding event in 1949. Twelve scouts representing all regions of the country visited Pres. Harry S. Truman and presented a "Report to the Nation" on scouting civic-service projects carried on during the previous year. These scouts later presented a report to the United Nations at Lake Success, N.Y., on service to scouts abroad.

Boy Scout week was further highlighted by the inauguration of a two-year crusade under the slogan "Strengthen the Arm of Liberty." This crusade was to extend through 1950. It was inaugurated at the Statue of Liberty on Bedloe's Island with ceremonies which included the lighting of 12 torches which the scouts took back to kindle other torches in the 543 local scout councils in America. The three goals of the crusade involve leadership, program and membership.

In May it was announced that the age levels in the three age groups of scouting were to be lowered by one year. Cub scouting would be for boys 8 through 10 years of age; boy scouting for boys 11 through 13; and exploring, which would combine all the features of the previous older scout program, involving air, sea and land activities, would be for young men 14 yr. and older.

At the same time, announcement was made of the second national jamboree of the Boy Scouts of America to be held in July 1950. It was to be held in Valley Forge park, Penn., on the site of Washington's encampment.

About 5,000 boy scouts and explorers went camping during the year. Scout councils conducted year-around camps in many communities as well as summer camps, and thousands of troops camped on their own sites.

The 12th international scout conference of world scout leaders was held in Norway in August, in which representatives of 41 scouting countries participated.

The Boy Scouts of America through their World Friendship fund extended aid to scouts in the Philippines and Japan, as well as to scouting countries in Europe. Books, equipment and badges, parcels of food and other materials were sent.

The membership on Oct. 31, 1949, was 2,322,094 persons organized in 69,185 scouting units. There were 1,709,950 boys and 612,144 leaders. (L. W. Ba.)

Great Britain and Commonwealth.—Scouting in Great Britain and the commonwealth continued to make steady progress during 1949. In Britain membership reached 473,216, the highest in the movement's history. An encouraging sign was an increase of 4,705 on the previous year in the number of adult leaders.

A "Bob-a-Job" week held in April, when every member of the movement was asked to earn at least one shilling toward administration costs by doing odd jobs, was a success both from the financial viewpoint and from the amount of good will that accrued to scouting.

In its role of encouraging international friendship, scouting was very active. At the beginning of the year a highly successful Pan-Pacific jamboree was held in Australia. From Aug. 17 to 25 nearly 3,000 Rover scouts from 30 countries camped together at Skjak in the mountains of Norway at the Fourth World Rover moot. A record number of British scouts camped abroad as guests of foreign scouts, and many scout visitors from other countries camped in Great Britain.

The council of the Boy Scouts association gave its sanction to a few minor changes in the scout uniform. Scouts over 15 and scout leaders could now wear berets on informal occasions such as camps and hikes, but the familiar wide-brimmed hat introduced by Lord Baden-Powell continued to be worn on all formal occasions. (Rn.)

Bradley, Omar Nelson

(1893–), U.S. army officer, was born on Feb. 12 in Clark, Mo., was graduated from the U.S. Military academy at West Point, N.Y., in 1915 and became a major of infantry in World War I. He was graduated from the Infantry school (1925), the Command and General Staff school (1929) and the Army War college (1934), taught at West Point until 1938, then had duty in Washington, D.C., on the general staff. During World War II, he commanded the 2nd corps in Africa and Sicily, and subsequently all U.S. ground troops for the invasion of Europe. As commander of the 12th U.S. army group, he commanded more than 1,300,000 combat troops—the largest body of U.S. soldiers ever to serve under a single field commander. By the end of the war he was a full general. From Aug. 15, 1945, to Dec. 1, 1947, he was administrator of veterans' affairs; on Feb. 7, 1948, he succeeded General of the Army Dwight D. Eisenhower as army chief of staff; and on Aug. 16, 1949, he became first permanent chairman of the U.S. joint chiefs of staff. During 1949, in testimony before congress and in public speeches, he urged passage of the North Atlantic treaty to prevent war by establishing, as he said, a common western frontier in the heart of Europe. On July 29 he told the house foreign affairs committee that in defending western Europe the U.S. would be primarily responsible for air operations; European nations, for ground forces. At the first meeting of the 12 Atlantic pact nations in Washington on Oct. 5, he was appointed head of a military committee to draw up common defense plans. In the dispute over the respective roles of the navy and air force in U.S. strategic plans, Bradley defended the air force B-36 as the world's best bomber in existence and declared in a speech in Akron, O., on Oct. 12 that the navy was getting its proportional share of military appropriations.

Brannan, Charles Franklin

(1903–), U.S. secretary of agriculture, was born on Aug. 23 in Denver, Colo., and was graduated from the University of Denver law school in 1929. He practised law in Denver until 1935, when he became assistant regional attorney of the Resettlement administration, and later regional attorney in the department of agriculture's office of the solicitor. From Nov. 1941 to April 1944, he was regional director of the Farm Security administration for Colorado, Wyoming and Montana. He was named assistant secretary of agriculture in June 1944; agricultural adviser to the U.S. delegation to the United Nations San Francisco conference in 1945; and secretary of agriculture in June 1948. During 1949 he sought congressional approval of a new agricultural plan to maintain farm incomes, and still give consumers the benefit of prices that would "seek their level," by supporting farm incomes by subsidies to make up any difference between market prices and incomes at the 1939–48 level. Testifying April 11–12 before the house agriculture committee, he said the plan would be cheaper than then current parity-payment plans; however, the new plan did not pass, though Pres. Harry S. Truman continued to advocate it as late as Labor day. Brannan also urged a house judiciary subcommittee investigation of food "monopolies," charging that reductions in retail food prices were hurting the farmer rather than the middleman.

Brannan Farm Plan: *see* Agriculture.

Brazil. A federal republic in eastern and central South America, Brazil is the largest of the Latin American nations. Language: Portuguese; religion: predominantly Roman Catholic. Capital: Rio de Janeiro (est. pop. 1949, 2,091,160); president (since Jan. 31, 1946): Gen. Eurico Gaspar Dutra.

Brazil's area of 3,286,170 sq.mi. is second only to that of Canada in the western hemisphere: it covers very nearly half of South America. The population (latest census, 1940: 41,236,315) was estimated at 48,900,000 as of Jan. 1, 1949. Three-fourths of this population is concentrated in an area along the coast, where the principal cities are located.

The population as shown by the 1940 census was: Brazilian born 39,822,487; foreign born, including naturalized Brazilians, 1,406,568; nationality unknown 7,260. The number of the foreign born, including naturalized Brazilians, and their countries of origin were: 380,294 Portugal, 325,305 Italy, 160,540 Spain, 144,523 Japan, 100,793 Germany, 54,405 Syria and Lebanon, 47,151 Poland and 30,413 U.S.S.R. Among the Brazilian born population, it was estimated that about one-half was of European stock; the remainder included 8,800,000 mulattoes, 6,000,000 Negroes, 5,500,000 Indians and mestizos and 250,000 Asiatics.

Political History.—Since early 1948, when an interparty agreement for co-operation with the legislative program of President Dutra's administration was signed by leaders of the National Democratic union (U.D.N.), the Social Democratic party (P.S.D.) and the Republican party (P.R.), the country's political life had been conditioned by the dickering between party leaders over the selection of candidates for the presidential elections. The superior electoral tribunal announced that these were to be held on Oct. 1, 1950. President Dutra declared publicly that he would not seek re-election. Aware of the fact that none of the existing parties was strong enough to expect to win alone at the polls, the president endeavoured to bring about a united front of the three principal parties (U.D.N., P.S.D., and P.R.) backing a common presidential candidate. Leaders of the three parties found it impossible, however, to agree on the same candidate. Numerous conferences, interviews, round tables and private talks took place in Rio de Janeiro and the various state capitals but to no avail. As the year 1949 drew to a close, the political situation in the country could be classified only as confused. The various political parties were to have their conventions sometime in early 1950 to decide on their respective candidates.

Area and Population of States and Territories of Brazil

(Latest estimates available as published by the Instituto Brasileiro de Geografia e Estatística)

State or territory	Area (sq. mi.)	Pop. (Jan. 1, 1949)	Capital
North			
Acre (terr.)	57,153	99,554	Rio Branco
Amazonas	595,474	502,151	Manaus
Rio Branco (terr.)	97,438	14,273	Boa Vista
Pará	470,752	1,094,200	Belém
Amapá (terr.)	55,489	25,553	Macapá
Guaporé (terr.)	96,986	25,159	Pôrto Velho
Northeast			
Maranhão	133,674	1,464,132	São Luís
Piauí	94,819	969,160	Teresina
Ceará	57,371	2,478,647	Fortaleza
Rio Grande do Norte	20,236	910,386	Natal
Paraíba	41,591	1,685,930	João Pessoa
Pernambuco	38,315	3,185,284	Recife
Alagoas	11,031	1,127,642	Maceió
Fernando de Noronha (terr.)	7	1,275	....
East			
Sergipe	8,321	642,857	Aracajú
Bahia	204,393	4,644,412	Salvador
Minas Gerais	228,469	7,985,145	Belo Horizonte
(Serra dos Aimorés)*	...	79,413	....
Espírito Santo	17,688	889,154	Vitória
Rio de Janeiro (state)	16,372	2,190,394	Niterói
Distrito Federal	451	2,091,160	Rio de Janeiro
South			
São Paulo	95,459	8,522,209	São Paulo
Paraná	82,741	1,465,444	Curitiba
Santa Catarina	31,118	1,396,769	Florianópolis
Rio Grande do Sul	110,150	3,936,245	Pôrto Alegre
Central-West			
Goiás	225,266	979,606	Goiânia
Mato Grosso	485,405	496,846	Cuiabá

*Area in dispute between the states of Minas Gerais and Espírito Santo.

Internationally, Brazil continued to pursue its traditional policy of friendship toward the United States, support for the United Nations and co-operation in the Pan-American movement through the Organization of the American States. In May 1949 President Dutra journeyed to the United States in response to an invitation of Pres. Harry S. Truman. His ten-day stay was marked by numerous expressions of friendship between the two peoples. While in Washington, D.C., President Dutra addressed a joint session of the U.S. congress.

On March 10 it was announced that the Joint Brazil-United States Technical commission had completed its task and had submitted its report to the governments of Brazil and the United States. The report presented by the commission pointed out that the need for a broad development program in Brazil was indicated by the low productivity and small income of the majority of its people and serious unbalance in its economic structure. The commission unanimously agreed that the economic development of the country should be accelerated by a carefully considered program of government expenditures, by policies favouring a balanced development of Brazil's resources by private enterprise and by policies directed specifically toward controlling inflation and meeting the balance of payments problem.

Education.—In 1947 there were 58,502 primary schools with 112,412 teachers and 4,336,437 students. Illiteracy was estimated at about 57% for the whole country. There were approximately 1,500 secondary schools with 300,000 students; 2,700 professional schools with 200,000 students; and 7 official universities. There were also three private universities maintained by the Catholic Church.

Finance.—The cruzeiro, the monetary unit of Brazil, divided into 100 centavos, sold in the free market at the rate of between 25 and 35 per U.S. dollar. The official rate established by the Banco do Brasil remained at 18.38 during 1949. At the end of the year the cruzeiro sold in the free market at the rate of 25 per U.S. dollar. Despite strong pressure from various quarters the government decided not to devalue the cruzeiro when Great Britain devalued the pound.

The federal government's budget for the year estimated expenditures at Cr$ 19,370,000,000 and revenues at Cr$ 18,229,000,000, with an anticipated deficit of about Cr$ 1,141,000,000. As of Jan. 1, 1949, the federal government debt was said to include £71,266,000 and U.S. $100,167,000. The cost of living had increased from an index of 100 in 1939 to 361 in 1948 and was still increasing in the middle of 1949 (362 in July).

Currency in circulation totalled Cr$ 18,400,000,000 as of July 1, 1949. Gold reserves were estimated at Cr$ 6,407,000,000 as of the same date.

Trade.—Exports during 1948 totalled Cr$ 21,696,874,000. Imports were valued at Cr$ 20,984,880,000. The principal export items were: coffee (Cr$ 9,018,600,000), raw cotton (Cr$ 3,385,000,000), cocoa beans (Cr$ 1,065,900,000), lumber (Cr$ 976,400,000), skins and hides (Cr$ 763,000,000), rice (Cr$ 740,800,000) and sugar (Cr$ 691,600,000). Coffee remained the principal export item, increasing from 14,800 tons valued at Cr$ 7,755,200,000 in 1947 to 17,500 tons valued at Cr$ 9,018,600,000 in 1948. In the first quarter of 1949 coffee sales brought U.S. $12,000,000 more than in the same period of 1948.

Brazilian exports to all countries during the first quarter of 1949 declined 6.6% as compared with the same period of 1948. On the other hand, imports increased 12% although U.S. exports to Brazil during the January-April period in 1949 were at the monthly rate of U.S. $43,800,000 as against an average of U.S. $50,200,000 during the January-April period of 1948.

On Nov. 10 a new commercial agreement was signed at Rio de Janeiro between Portugal and Brazil. This agreement, valid until Dec. 31, 1950, and subject to renewal, provided for certain facilities in the exchange of specified products between the two countries. Brazil also signed a commercial agreement with Great Britain (announced Aug. 5) for 1949, subject to renewal for periods of three months at a time thereafter, providing for certain facilities in the issuing of export and import licences for certain specified goods.

Communications.—There were about 36,000 km. of railroad track in operation and about 300,000 km. of surface roads in 1948. It was estimated that there were in the country approximately 300,000 automobiles at the end of 1948, including passenger cars and trucks.

In 1947 there were 124,000 km. of air routes in operation. At the end of 1948 there were 31 aviation companies (8 foreign and 23 domestic) serving 157 different points. There were 68,000 km. of telegraphic lines.

Agriculture.—Sugar production in 1948 was estimated at about 28,200,000 tons. The cotton production was about 240,000 tons and the cocoa bean harvest was estimated at 122,000 tons for the same year. The total value of the agricultural production was estimated at about Cr$ 27,500,000,000 in 1947. The total value of animal products in the same year was estimated at Cr$ 11,130,000,000. There were more than 46,000,000 cattle at the end of 1946.

Manufacturing.—The total value of textiles exported in 1948 was Cr$ 480,069 as against Cr$ 1,252,587 in 1947. Most of these exports went to Argentina, South Africa and Venezuela.

Other important industrial products in 1948 were: cement 1,111,503 tons; pig iron 532,394 tons; steel 481,114 tons; sheet iron 386,665 tons.

Mineral Production.—In 1948 the total mineral and metallurgic output was valued at about Cr$ 4,410,648,000, including iron, steel, arsenic, coal, cement, gold, silver, rock crystal and mineral ores of various kinds.

On July 29, 1949, the National Petroleum council signed contracts for the installation of an oil refinery in Brazil. A French firm was to furnish materials and equipment and a U.S. firm would plan its installation.

Work continued on a U.S. $43,000,000 hydroelectric project at Paulo Affonso falls, on the São Francisco river, designed to serve northeastern Brazil. The Companhia Hidro-Electrica do São Francisco, partially financed by the federal government, expected that by 1953 when the first generators were to be installed, the Paulo Affonso plant would produce 120,000 kw. for the five states of Pernambuco, Alagoas, Paraíba, Sergipe and Bahia, doubling their power supply. Altogether, nine generators were to be installed at the falls. The company was capitalized at U.S. $20,000,000, half of the stock having been underwritten by the federal government and the remainder by states, municipalities, private corporations and individuals. The company was expecting to secure a loan of U.S. $15,000,000 from the International Bank for Reconstruction and Development.

Coal production totalled 2,013,284 tons in 1948, mostly in the states of Santa Catarina and Rio Grande do Sul.

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Bread and Bakery Products.

Since the end of World War II bakers in many countries had shown an increasing awareness of the need for industry-supported laboratories of baking technology. At North Sydney, Australia, a new building to house the Bread Research institute of New South Wales was formally dedicated in Oct. 1949. The newly established laboratories of the British Baking Industries' Research association, located just outside London, England, initiated ambitious programs of studies on bread, sweet goods, biscuits and matters of general interest to all segments of the industry. In the United States an attack on the unsolved problem of staling was begun at the American Institute of Baking, Chicago, with the financial support of the U.S. department of agriculture.

For the first time since 1939 statistics on the baking industry in the United States were reported by the department of commerce in their census of manufactures. The report, which covered data for the year 1947, showed that bread and other bakery products produced by 6,797 plants had a value of $2,416,891,000; there were 326 plants making biscuits, crackers and pretzels with a value of $540,222,000. The total value of all products was about $3,000,000,000, as compared with approximately $1,250,000,000 in 1939. The number of employees was 279,368 in all branches of the industry exclusive of 11,104 single-outlet retail bakeries which were not included. The data indicate that about 85% of all bread and breadlike rolls were made from white flour, the remainder being dark wheat or rye breads, raisin or other specialty breads. More than half of the wholesale bread production of the United States was concentrated in eight states—California, Illinois, Michigan, New Jersey, New York, Ohio, Pennsylvania and Texas.

Three states enacted compulsory enrichment legislation during 1949, making a total of 26 states where all family flour as well as commercial white bread and rolls were required to meet specified standards for thiamine, riboflavin, niacin and iron. A survey of the usage of milk products by the bread-baking industry, conducted under the joint auspices of the University of Wisconsin and the bureau of agricultural economics, showed that it was about the same as the prewar average. This had been a matter of interest because the use of milk products necessarily had been severely restricted during the war years. The data indicated any concern, that enrichment of bread with vitamins and minerals may have discouraged the use by bakers of milk products in bread production, to be without foundation.

Another reference booklet, *Bakery Products*, published by the U.S. department of commerce, was prepared by George L. Fischer. This booklet provides a bibliography, with brief descriptions of many of the articles cited, of government and other publications, names of trade journals, directories and lists of national organizations of the baking industry. It lists all the available publications of importance on bakery operations and statistics of the industry.

The U.S. Food and Drug administration of the Federal Security agency (FSA) completed a public hearing on Sept. 20 for the purpose of developing a definition and standard of identity of bread, rolls and related products. Much time at the hearing was devoted to testimony regarding numerous ingredients that are not used in home baking, and about many of which there admittedly was need for more experimental study. In particular, serious questions were raised about the propriety of bakers incorporating in their bread preparations called by the chemical name, polyoxyethylene monostearate, but more generally referred to in the industry as "bread softeners." (*See* also FLOUR.) (F. C. BG.)

Brewing and Beer.

Beer and ale sales in the United States for the fiscal year ending June 30, 1949, totalled 85,809,068 bbl., the second highest fiscal year figure on record. Highest figure was 86,992,795 bbl. in 1948. Total sales by years since 1934 are given in the table.

Sales of Malt Beverages in the U.S.

(Years ending June 30)

Year	Sales (bbl.)*	Year	Sales (bbl.)*
1934	32,266,039	1942	60,856,219
1935	42,228,831	1943	68,636,434
1936	48,759,840	1944	76,969,764
1937	55,391,960	1945	79,590,598
1938	53,926,018	1946	81,286,821
1939	51,816,874	1947	82,629,441
1940	53,014,230	1948	86,992,795
1941	52,799,181	1949	85,809,068

*A U.S. barrel is 31 U.S. gal.

Bottled and canned beer accounted for 70% of the 1949 fiscal year sales total. A comprehensive survey by a representative firm showed that 54% of the country's urban families were consumers of beer during 1949.

Consumption of malt beverages had increased by about 34,000,000 bbl. since 1939. The entire increase was accounted for by packaged sales, made largely in food stores for home consumption, although a considerable volume of packaged as well as nearly all of the draught beer was sold through taverns.

For the first eight months of the calendar year 1949, all indications pointed to a record year for beer and ale sales. Withdrawals at that point totalled 58,411,593 bbl., topping by more than 500,000 bbl. the previous record sales of 57,880,644 bbl. August registered the highest single month's sale of beer in the nation's history, with 8,901,000 bbl.

Wisconsin led in the fiscal year both in production, 12,192,295 bbl., and sales, 11,341,985 bbl. New York was second and Pennsylvania third in both categories.

A development of major interest to the industry during 1949 was the introduction of courses in brewing sciences in the University of Wisconsin, Madison, Wis., and the Illinois Institute of Technology, Chicago, Ill. These courses were similar to those which had been offered for many years by the University of Birmingham in England.

The industry's plans for expansion for 1950 called for an expenditure of more than $100,000,000 for plant and equipment by various breweries.

The U.S. bureau of the census of manufactures' figures for 1947, the latest available, showed that the industry in that year paid out $292,000,000 in wages and salaries, as compared with $122,300,000 in 1939, and expended $620,000,000 for materials, fuel, new plant and equipment, as compared with $182,300,000 in 1939.

By-Products.—Brewers' wet and dry grains, used extensively as high protein cattle feed, and brewers' yeast, richest known natural source of B vitamins, are important by-products of the brewing process. Since World War II there had been an increasing use of brewers' yeast as a human nutrient and as a vitamin supplementary feed for poultry, livestock and other domestic animals to provide a balanced ration. For example, a report by the Brewers Yeast council in 1949 stated that experiments had indicated that the incorporation of brewers' yeast in the daily feed of young fur-bearing animals had the effect of aiding survival and producing furs with a finer than normal lustre.

Debittered yeast is used in bread and crackers and in the enrichment of noodles and dehydrated soup. In addition to its use in baking products, the yeast also is added in small quantities to candy, meat loaves, gravies, peanut butter, syrup and casseroles.

Moderation and Enforcement.—Close co-operation between brewers, wholesalers and retailers continued to be an integral part of the industry's self-regulation program which had its inception in 1938. This program, sponsored by the United States Brewers foundation, whose members produce approximately 90% of the nation's beer and ale, is an educational one, designed to impress upon government agencies the necessity for strict enforcement of reasonable laws and regulations, and upon retail licensees the importance of strict observance of these laws.

The foundation maintains a large field staff to act as liaison with both groups in efforts to attain these results. This staff works constantly with retailers to educate them to the value of maintaining high standards of operation and to encourage them to keep their establishments acceptable to the public.

Taxes.—Federal excise and special taxes on malt beverages for the fiscal year 1949 totalled $690,797,422, bringing the cumulative total since relegalization (April 7, 1933) to $6,830,607,414. State and local taxes and licence fees in fiscal 1949 were estimated at $225,000,000, raising the cumulative figure for that revenue to about $2,300,000,000. Beer and ale were in 1949 taxed at $8 per barrel. (*See* also LIQUORS, ALCOHOLIC.)

(E. V. LH.)

Bridge, Contract: *see* CONTRACT BRIDGE.

Bridges.

The world's longest spans of the various types built up to 1950 are listed in the following table:

World's Longest Spans by Type of Bridge

Type	Bridge	Location	Year Completed	Span
Cable Suspension	Golden Gate	San Francisco	1937	4,200 ft.
Transporter Bridge	†Sky Ride	Chicago	1933	1,850
Cantilever	*Quebec	Canada	1917	1,800
Steel Arch	Kill van Kull	New York	1931	1,652
Eyebar Suspension	*Florianopolis	Brazil	1926	1,114
Concrete Arch	Sando	Sweden	1943	866
Continuous Truss	Dubuque	Mississippi river	1943	845
Simple Truss	*Metropolis	Ohio river	1917	720
Continuous Girder	Cologne	Rhine river	1948	605
Vertical Lift	*Cape Cod Canal	Massachusetts	1935	544
Wichert Truss	Homestead	Pittsburgh	1937	533½
Swing Span	*Fort Madison	Mississippi river	1927	525
Tubular Girder	*Britannia	Menai straits	1850	460
Timber Span	*McKenzie River	Coburg, Ore.	1926	380
Bascule	*Sault Ste. Marie	Michigan	1914	336
Masonry Arch	Plauen	Saxony	1903	295
Single Leaf Bascule	*16th Street	Chicago	1919	260
Concrete Girder	Villeneuve	Seine river	1939	256

*Railroad bridge. †Not standing.

United States.—Progress was recorded in 1949 in securing official authorization for the proposed Liberty bridge to span the Narrows at the entrance to New York harbour between Brooklyn and Staten Island with the unprecedented span length of 4,620 ft. and an underclearance height of 237 ft., at an estimated cost of $78,000,000. Public hearing on the application of the Triborough Bridge authority of New York city was held on Jan. 12 before a board of top-ranking officers of the U.S. army, navy and air force; and official war department approval of the plans was signed by the U.S. secretary of defense on May 24 (the birthday of the Brooklyn bridge).

Official approval by the governor and the state superintendent of public works in 1949 paved the way for the construction of a new suspension bridge of 1,700-ft. main span to be built by the New York State Bridge authority across the Hudson river between Kingston and Rhinecliff, estimated to cost $14,000,000, for which preliminary plans were completed in 1948.

Plans were completed in 1949 for the reconstruction and modernization of the famous old Brooklyn bridge (completed 1883), including the increase of traffic capacity from the original two lanes to six modern highway lanes. Including the widening and modernization of the approaches, the total estimated cost was $6,750,000. Construction was scheduled to commence early in 1950.

Construction progressed through 1949 on the new $13,000,000 Tacoma Narrows bridge, a four-lane suspension bridge replacing the two-lane structure which was completed on July 1, 1940, and which was destroyed by aerodynamic oscillations on Nov. 7, 1940. The new bridge utilizes the original piers, with a main span of 2,800 ft., the third longest in the world. Misfortune continued to attend this undertaking. On April 13, 1949, an earthquake hurled a 23-ton saddle casting from the top of one of the completed towers to the bottom of Puget sound, sinking a work barge en route; and on June 8 a fire at the base of the west tower buckled one of the steel plates and caused $300,000 damage.

Construction progressed through 1949 on the substructure for the Delaware Memorial bridge (suspension type) over the Dela-

STEEL FRAMEWORK of the South Capitol Street bridge spanning the Anacostia river in Washington, D.C. The new bridge was scheduled for opening in Jan. 1950 ware river near Wilmington, Del., to connect Delaware's du Pont highway with New Jersey's planned new turnpike. With a main span of 2,150 ft. (the sixth longest in the world), the estimated cost was $40,000,000. The project was 3½ mi. long, including the bridge length of 10,765 ft. between abutments.

The California Toll Bridge authority approved in 1949 the plans for a new bridge over San Francisco bay, to parallel the existing Transbay bridge about 300 ft. to the north of that structure.

Contracts were let by the Maryland State Road commission in 1949 for the construction of the Chesapeake Bay bridge. The 1948 estimate of $36,370,000 for the structure was increased to $47,000,000. The crossing included a suspension bridge of 1,600 ft. main span and a cantilever bridge of 780 ft. main span.

Chicago's State Street bridge, under construction since 1941, was completed in 1949. Work on the $3,000,000 double-leaf bascule over the Chicago river was suspended during the war. The structure, to be known as the Bataan-Corregidor Memorial bridge, accommodates six lanes of traffic.

The new four-lane highway cantilever bridge over the Mississippi river at Memphis, Tenn. (main span 790 ft.) was completed in Dec. 1949, at a cost of $13,500,000.

The $5,400,000 Victory bridge, at Washington, D.C., extending South Capitol street over the Anacostia river, was scheduled for opening in Jan. 1950. The structure, 3,250 ft. long, consists of continuous steel girders and a girder swing span.

The Pennsylvania legislature appropriated $5,500,000 in 1949 for the construction of a toll-free bridge across the Susquehanna river at Harrisburg.

A significant event in 1949 was the casting and testing of the first precast concrete girder in the United States. This 160-ft. girder was for Philadelphia's new $700,000 Walnut Lane bridge, the first application in America of this new type of bridge construction. The available 400 tons of steel ingots, added to the 150-ton dead weight of the girder, proved insufficient to produce failure. The reinforcing wires, prestressed to 125,000 lb. per square inch, had an ultimate strength of 242,000 lb. per square inch and a yield strength of 213,000 lb. per square inch (compared with 160,000 lb. per square inch specified), and the concrete had a 28-day strength of 7,200 lb. per square inch (compared with 5,400 lb. per square inch specified). The bridge, scheduled for completion early in 1950, would have 13 prestressed concrete girders 160 ft. long in the main span and 7 girders 74 ft. long in each side span.

The $27,000,000 Mystic River bridge, in the Charlestown section of Boston, Mass., under construction 1947–50, is a high-level cantilever bridge, with 800 ft. main span. It contains 50,000 tons of steel and 50,000 cu.yd. of concrete.

The Lake Washington Floating bridge at Seattle, Wash., completed in 1940 at a cost of $9,860,000, was made toll-free after nine years of collections. The removal of tolls increased traffic to a point where construction of a second bridge across the lake was being considered. The Washington State Bridge authority also approved the proposal of Wasco county, Ore., to build a $2,511,000 interstate toll bridge across the Columbia river at The Dalles.

A new $4,000,000 high-level bridge over the Chesapeake and Delaware canal at Chesapeake City, Md., was completed in 1949 to replace a lift bridge which was destroyed in 1942 when a tanker crashed into the south pier. The new bridge is a steel tied-arch of 540 ft. span, identical in span and design with the bridge at St. Georges, Del., built in 1942 over the same canal following a similar accident in 1939.

Construction progressed through 1949 on the high-level Penrose Avenue bridge, crossing the Schuylkill river between Philadelphia and Chester, Pa. The project is 12,378 ft. long, including approach viaduct spans on high concrete piers and a cantilever bridge of 680 ft. main span.

The famous Pecos viaduct of the Southern Pacific railroad near Comstock, Tex., for many years the highest railroad bridge in the United States, was dismantled in 1949 after replacement by a new cantilever bridge in 1944. The old structure, built of wrought iron in 1891, was 2,180 ft. long, with 48 girder spans and a central cantilever truss span of 185 ft., at a height of 321 ft. above low water level of the Pecos River canyon. The new bridge is a deck cantilever truss with central span of 374½ ft.

A new cantilever bridge for the Mississippi state highway over the Yazoo river near Vicksburg, Miss., was completed in 1949 at a cost of $1,362,000.

The High Level bridge, connecting Akron and Cuyahoga Falls, O., arching 185 ft. above the Cuyahoga river, completed in 1949, is a decktype cantilever bridge, 900 ft. long, with a centre span of 480 ft.

A reinforced concrete highway bridge 1,000 ft. long was built by the California highway department in 1949 across the Santa Ana river near Anaheim, Calif.

A 930-ft. bridge of three truss spans, built in 1899, supporting a single-track line of the Southern Pacific railroad near Herndon, Calif., was replaced in 1948–49 while traffic continued without interruption.

Plans were announced in 1949 by the Northern Pacific railroad for the construction of a new bridge across the Mississippi River near Bismarck, N.D., to replace the existing triple-span 1,514-ft. structure completed in 1882 as a wooden bridge and rebuilt as a steel structure in 1902.

At East Fredericktown, Pa., a suspension bridge of 1,000 ft. span was built over the Monongahela river in 1949 to carry a belt conveyor for bringing coal across the river from mine to processing plant.

In South Carolina, a three-span steel highway bridge (put out of service when the Santee dam was completed in 1941) was moved 20 mi. downstream in 1949, from Lake Marion on the Santee river to a new crossing over the Santee-Cooper diversion channel. The three truss spans (150, 168, 150 ft.) were lifted from their original piers, towed downstream on a wooden barge and placed on newly constructed piers at the new site, to carry another highway.

During the cantilever erection of the new Bluestone River highway bridge near Hinton, W.Va., a sudden collapse of the first 231 ft. of the 278-ft. centre span on March 31, 1949, plunged five men to their death in the stream 150 ft. below, and four others were injured. The cause of the collapse was not discovered.

The 6,000-ton, 320-ft. span, double-leaf bascule bridge (constructed in 1924) at Terminal Island, in the Long Beach and Los Angeles, Calif., harbour, was raised 7½ ft. in five days in 1949 to correct conditions caused by land subsidence.

Reconstruction of 3,383 ft. of the Illinois Central railroad bridge over the Ohio river at Cairo, Ill., to take three years and cost $6,000,000, was commenced in 1949. When built in 1889, the 7,683 ft. structure was the longest all-steel river crossing in the world.

A huge ice jam on the Des Moines river in 1949 knocked out a three-span steel truss crossing at Chillicothe, Ia. The centre span was completely washed away, the south span was pushed from its piers, while the north span buckled but remained in place.

The oldest suspension bridge in the United States, spanning the Ohio river on U.S. 40 at Wheeling, W.Va., completed 100 years of service in 1949. Built originally in 1849 by Charles

Ellet with a then unprecedented span of 1,010 ft., the structure was wrecked by aerodynamic oscillations in 1854 and was then rebuilt and stiffened by John A. Roebling.

Canada.—In Vancouver, B.C., an $8,000,000, eight-lane bridge, 90 ft. wide, with 90 ft. clearance over the water, was planned in 1949 to replace the Granville Street bridge. The latter, a low-level structure with swing span, caused traffic tie-ups when the bridge was opened in rush hours. Construction of the new bridge was planned to start in 1950.

Construction of a $13,500,000 low-level bridge, 3,000 ft. long, over the Strait of Canso, which separates Cape Breton Island from the mainland of Nova Scotia, was authorized in 1949 by the Canadian government. Difficult foundation problems were presented by the strong tidal currents and the 200-ft. depth of water.

Brazil.—The Galeao bridge in the harbour of Rio de Janeiro, a 15-span prestressed concrete girder bridge 1,215 ft. long, was opened to traffic in 1949 with only three of the final six highway lanes completed. The longest span is 142½ ft.

Belgium.—A contract was let in 1949 in Belgium for the world's first prestressed concrete bridge incorporating continuous spans. Spanning the Meuse river at Sclayn, the bridge was to consist of two 206-ft. hollow girder spans continuous over a central pier. A lower bid, for a concrete bow-string arch, was rejected because it required three piers in the river.

Hungary.—All of the bridges over the Danube at Budapest (five highway and two railway) were wrecked during World War II; six were blown up by the German troops and one (the uncompleted Arpad bridge) was damaged by artillery. Until 1946, when the Franz Joseph suspension bridge was reconstructed, the city was served only by a pontoon bridge, which replaced the famous Elizabeth suspension bridge, and by a temporary trestle bridge, which replaced the Margaret bridge. Plans were made to rebuild or replace the famous Clark chain suspension bridge in 1949 and the Nicholas Horthy bridge (now renamed the Boraros bridge) in 1950. In the meantime, as steel became available, the continuous steel girder Arpad bridge, with a longest span of 340 ft., was carried to completion in 1949. The deck area of this bridge is 90 ft. wide and 3,000 ft. long.

The famous Margaret bridge, built in 1876, consisted of wrought iron deck arches crossing the two channels of the Danube river, with three spans of 302, 285 and 254 ft. on each side of Margaret Island. The reconstruction of this bridge with new steel arch spans on the old piers, completed late in 1948, involved difficult problems, because the old wrought-iron arches, broken in the centre by demolition charges, had pulled the upper part of the piers away from the lower part as they collapsed. Some 5,000 tons of structural steelwork were required for the new bridge.

Germany.—The reinforced concrete arch bridge carrying the important Mittelland canal across the Weser valley near the town of Minden, destroyed by the retreating German army in 1945, was rebuilt in 1947–49 at a cost of $2,000,000.

The reconstructed Autobahn bridge across the Lahn River valley at Limburg, on the Frankfurt-Ruhr route, has spans of 207, 311 and 207 ft. German military K-type trusses were used as the bridge was cantilevered across the river.

Greece.—The Brallo bridge, steel deck-truss type, on the Athens-Salonika line of the Greek State railroad, was completed in 1949 as one of the reconstruction projects carried out by the American Mission for Aid to Greece.

India.—Construction was commenced in 1949 on a new bridge across the Mahanadi river, near Sambalpur. The bridge, estimated to cost $3,000,000, would form an important link on the national highway between Bombay and Calcutta.

Japan.—A 1,600-ft. reinforced concrete bridge over the Tama river, on the modern highway from Tokyo to Yokohama, was completed in 1949. It was under construction for two years at a cost of 130,000,000 yen ($400,000 U.S.).

(*See* also ROADS AND HIGHWAYS.) (D. B. S.)

British Borneo.

British territories in Borneo consist of the colonies of North Borneo including the island of Labuan (area, 29,417 sq.mi.; pop. [1948 est.] 332,000); Sarawak (area, *c.* 50,000 sq.mi.; pop. [1948 est.] 550,000) and the protected state of Brunei (area, 2,226 sq.mi.; pop. [1948 est.] 41,000). Chief towns: North Borneo: Jesselton (cap., 26,158) and Sandakan (33,131); Sarawak: Kuching (cap., 37,949). Governors, 1949: North Borneo, Sir Ralph Hone; Sarawak (also high commissioner for Brunei), Duncan G. Stewart (assassinated in December).

History.—Proposals for the establishment of executive and legislative councils in North Borneo were approved and the necessary instruments to give them effect were in process of drafting and were expected to be ready before the end of 1949. Under arbitration an award of £1,400,000 was fixed as the sum to be paid by the British crown to the British North Borneo company in respect of the transfer to the crown of the company's sovereign rights and assets in North Borneo under the terms of the agreement entered into in June 1946.

The governor, D. G. Stewart, was stabbed on Dec. 3, at Sibu, by a member of the Malay Youth association, which opposed the cession of Sarawak to the crown. He died at Singapore on Dec. 10.

Finance and Trade.—Currency: Straits dollar, valued Nov. 14, 1949, at 8.57 to the pound, or at 32.67 cents U.S.

	North Borneo	Sarawak	Brunei
Revenue (1948)	Str. $13,780,929	Str. $14,055,045*	Str. $6,586,299
Expenditure "	$10,727,063	$19,186,932*	$3,740,254
Imports "	c. $25,419,000	$98,769,885	c. $35,000,305
Exports "	c. $29,742,000	$171,250,887	c. $49,000,000

*1949 estimates.

Principal exports: North Borneo, rubber and timber; Sarawak, diesel oil, crude oil, rubber and sago flour; Brunei, crude oil. In assessing Sarawak's import and export figures note should be taken that all Brunei's crude oil (to the value of Str.$47,140,683 in 1948) is pumped to the refinery at Miri and later re-exported. (*See* also BRITISH EMPIRE; NETHERLANDS OVERSEAS TERRITORIES.) (JO. A. HN.)

British Columbia.

British Columbia, Canada's Pacific coast province, has an area of 366,255 sq.mi., of which 359,279 sq.mi. are land and 6,976 sq.mi. are water, ranking third in area among the ten provinces of Canada. In 1849 and 1858, Vancouver Island and British Columbia were constituted crown colonies, respectively. In 1866 they united, and on July 20, 1871, became the sixth province to join the Canadian confederation.

The population on June 1, 1949, was estimated to be 1,114,000 (1941 census, 817,861). The population is predominately of British origin, 70% at the time of the 1941 census. At the 1941 census, urban dwellers numbered 443,394 and rural dwellers 374,467. The principal ports and chief urban centres are Greater Vancouver (1941 pop., 351,491), Greater Victoria (75,218), the capital, and New Westminster (21,967), which are all located in the southwestern corner of the province. It was estimated in 1949 that the population of Greater Vancouver was 504,925, Greater Victoria, 115,450, Greater New Westminster, 52,749.

History.—In the fifth session of the 21st parliament of British Columbia, Feb. 8, 1949–March 24, 1949, the following measures were passed: an act to provide for the development of the central interior of British Columbia authorizing the expenditure of $5,500,000 for the development of hydroelectric power; an act to promote industrial development of the province; an act to borrow $38,500,000 for purposes of construction of roads, bridges and buildings; an amendment creating a branch of the department of health and welfare to be known as the hospital insurance service; an act permitting the sale of oleomargarine within the province under certain regulated conditions; an amendment to the Provincial Elections act allowing Indians and Japanese-Canadians to vote.

In February, Premier Byron I. Johnson announced a comprehensive development program, embracing extension of the Pacific Great Eastern railway; a $30,000,000 public highway program; acceleration of power development, industrial development, irrigation development and construction of government buildings.

On June 15, 1949, a provincial election was held with the Liberal-Progressive Conservative Coalitionists having 39 seats; the Co-operative Commonwealth Federationists 7; Labour 1; and independent 1.

In August it was announced that the government of Canada would recommend to parliament the granting of a subsidy of $15,000 per mile to the government of British Columbia for the purpose of extending the Pacific Great Eastern railway from Quesnel to Prince George.

Preliminary investigations were underway for the possible establishment of a $350,000,000 aluminum industry in British Columbia.

Members of the provincial executive council, or cabinet, and their portfolios at the close of 1949 were: Byron I. Johnson, premier and president of the council; G. S. Pearson, provincial secretary and minister of health and welfare; G. S. Wismer, attorney general; E. T. Kenney, lands and forests; H. Anscomb, finance; H. R. Bowman, agriculture; R. C. MacDonald, mines and municipal affairs; E. C. Carson, public works; L. H. Eyres, railways, trade and industry and fisheries; J. H. Cates, labour; W. T. Straith, education.

Education.—During the school year ending June 30, 1948, 146,708 students were enrolled, in the elementary (91,122), elementary-senior-junior high (12,309), superior (2,751), junior, junior-senior and senior high (40,526) schools of the province. Teaching staffs comprised 5,116 teachers, in the elementary 2,850, elementary-senior-junior high 439, superior 102, junior, junior-senior and senior high 1,659 and 66 unclassified. Higher education is provided by the University of British Columbia, a provincially endowed institution, and two teacher training schools located in Vancouver and Victoria.

Finance.—Herbert Anscomb, minister of finance, reported that revenue collected during the fiscal year ended March 31, 1948, amounted to $67,077,739; expenditures had been $63,475,697; the net debt at Dec. 31, 1948, was $127,625,937, an increase of $5,219,750 over Dec. 31, 1947. Anticipated revenues and expenditures for the fiscal year 1949–50 were $92,980,590 and $92,308,019, respectively.

Communications.—The total highway mileage as of March 31, 1948, excluding the Alaska highway, amounted to 22,277 mi., of which 9,872 mi. were surfaced, 9,779 mi. were improved earth, 2,626 mi. were unimproved earth roads. Railway mileage as at Dec. 31, 1948, was 4,868 mi. of main line track and 1,160 mi. of sidings. During 1948 approximately 4,311,539 tons of cargo were loaded at British Columbia ports for foreign countries, while 2,485,594 tons of cargo from foreign countries were unloaded at local ports. In 1947 the total number of telephones, 215,691, included 76,921 on automatic switchboards.

Manufacturing.—Preliminary statistics relating to the manufacturing industries indicated that the 1948 gross value of production would be well in excess of the previous all-time high established during 1947. The high levels established during 1948 were fairly well maintained during 1949.

Table I.—*Principal Manufacturing Industries of British Columbia*

Industry	Gross value of Products 1947	Gross value of Products 1946
Sawmills	$218,235,191	$130,433,625
Pulp and paper	61,346,715	42,030,596
Fish curing and packing	56,618,563	43,256,957
Slaughtering and meat packing	30,378,352	28,087,775
Shipbuilding and repairs	28,489,231	31,680,612
Fruit and vegetable preparations	26,424,577	21,269,911
Fertilizers	23,441,939	20,623,774
Veneer and plywood	22,499,208	14,677,940
Total all manufacturing industries	858,284,592	644,527,898

Table II.—*Economic Activity in British Columbia*

	Unit	1947	1948	1949 Preliminary Estimates
AGRICULTURE:				
Total value of production	$	134,508,400	142,108,000	143,250,000
Livestock	$	18,531,000	19,991,000	21,000,000
Poultry products	$	19,890,000	20,118,000	21,500,000
Dairy products	$	25,588,000	28,812,000	30,000,000
Fruits and vegetables	$	33,652,900	34,750,000	31,250,000
Field crops	$	30,488,000	33,293,000	34,500,000
Miscellaneous	$	6,358,500	5,144,000	5,000,000
FISHERIES:				
Total value of production	$	58,764,950	58,605,619	63,000,000
Pack of canned salmon	cases	1,527,135	1,313,909	1,435,000
FORESTRY:				
Total value of production	$	282,288,388	363,786,000	360,000,000
Timber scaled	M.B.M.	4,187,816	4,293,465	4,000,000
Paper production	ton	410,994	407,210	
MINING:				
Total value of production	$	113,221,254	152,524,752	142,000,000
Lead	$	41,884,977	60,072,542	
Zinc	$	30,147,039	41,234,603	
Coal	$	8,587,380	10,854,108	
Gold	$	8,715,455	10,603,250	
INTERNAL TRADE:				
Index of wholesale sales	1935–39 = 100	314.6	333.8	340.0
Total value of retail sales	$000	664,470	731,520	780,000
Value of retail department store sales	$000	87,020	102,378	108,000
Railway freight loaded	ton	9,904,060	10,325,427	10,400,000
Consumption of electric power	000 kw.hr.	3,011,763	3,436,778	3,640,000
Construction, building permits	$000	61,228	96,953	98,000
Bank debits	$000	6,564,000	7,043,620	7,600,000
Index of employment	1926 = 100	193.7	202.6	200.0
Salaries and wages paid	$000	557,076	650,000	690,000

Agriculture, Fisheries, Mining, Forestry.—Preliminary provincial departmental estimates for 1949 indicated that the net value of production in the agriculture and fisheries industries was higher, the mining industry lower, with the forestry industry remaining at about the same level as in 1948.

FILMS OF 1949.—*Skeena River Trapline* (National Film Board of Canada).

(G. T. H.)

British East Africa.

The term is used to cover Kenya (colony and protectorate), Uganda (protectorate), Tanganyika (under United Kingdom trusteeship), Zanzibar (protectorate) and British Somaliland (protectorate). Kenya: area 224,960 sq.mi.; pop. (1948 census) 5,373,231; capital, Nairobi. Uganda: area 93,981 sq.mi.; pop. (1948 census) 4,993,965; capital, Entebbe. Tanganyika: area 362,688 sq.mi.; pop. (1948 census) 7,074,160; capital, Dar es Salaam. Zanzibar (which includes the islands both of Zanzibar and Pemba): area 1,020 sq.mi.; pop. (1948 census) 265,872; capital, Zanzibar (town). Somaliland: area *c.* 68,000 sq.mi.; pop. (1947 est.) *c.* 700,000; capital, Berbera. Many different languages are spoken, but the dialect commonly known as Swahili (a mixture of Arabic, Persian and various African tongues) is used to some extent as a *lingua franca* throughout the whole region.

In 1948 the East African high commission, consisting of the officers for the time being administering the governments of Kenya, Uganda and Tanganyika, with a central assembly (consisting of official and unofficial members with an unofficial majority) and an executive organization, was established to coordinate and control the technical services of the three territories.

Governors, 1949: Kenya, Sir Philip Mitchell; Uganda, Sir John Hathorn Hall; Tanganyika, Sir Edward Twining; Somaliland, Gerald Reece; Zanzibar, British resident, Sir Vincent Glenday.

History.—Constitutionally there were no changes in 1949 but it was a year of great development in the sphere of local government. Kampala was raised to municipal status with a municipal council exercising considerable local autonomy, consisting of European, Asian and African members and presided over by a nonofficial (Asian) chairman. In Dar es Salaam a new municipal council was established with equal numbers of nonofficial European, African and Indian members. The raising by Nairobi of a £1,500,000 loan on the open market on its own assets and responsibility opened a new stage in the development of colonial municipalities. In Uganda the African local government ordinance of January gave constitutional support to developments of recent years. In Kenya the text of a bill to provide for local government in native areas and re-establishment of district councils was submitted to the country for criticism and later was laid before the legislative council. In Tanganyika the first provincial council (comprised of officials and unofficial members of the European, Asiatic and African communities) was formed in the Lake province and held its first meeting in June.

Considerable progress was made toward easing the transport bottleneck. About 350 mi. of railway were under construction in Tanganyika; in Kenya realignment between Nairobi and Nakuru reduced the distance and produced an easier gradient. At a conference in London in January on East African transport problems, attended by East African governors and by representatives of both the British government departments concerned and of the East African railways, congestion at Dar es Salaam was the main subject of discussion; immediate steps decided on were the extension of the existing quay by 500 ft., a large increase in the lighter fleet, an addition of three cranes and a steady increase in railway rolling stock. A technical committee of the East African railways reported later in the year that it estimated Dar es Salaam could be developed into a major port with 18 deep-water berths and that with certain limited improvements, either in hand or suggested, it should by 1951–52 be able to handle nearly twice the total tonnage of 1948.

It was announced that to carry out these and other improvements the East African Railways and Harbours administration was preparing to borrow £23,000,000 in instalments.

In May agreement with the Egyptian government was announced with regard to the building of a dam and hydroelectric power station at Owen falls, Uganda. The Egyptian government offered to pay £4,500,000 toward the cost of the scheme (estimated to cost a total of £12,00,000). The contract for the construction of the dam was placed with an Anglo-Dutch firm and the work was expected to be completed in four years. Meanwhile, work forged ahead on certain preliminary installations—the construction of a temporary electrical power plant (diesel-driven), railway sidings and camps for the labour force.

The United Nation's Trusteeship committee mission, which visited Tanganyika in 1948, made a number of criticisms of the administration to which the British government published a vigorous reply.

The peanuts scheme in Tanganyika produced more controversy than oil. A report—*Overseas Food Corporation: Report and Accounts for 1948–49* (H.C.252)—showed that the original plan had been badly overoptimistic both as to costs and possible rate of progress. Not the least disturbing feature of the report was the comment of the auditors. Nevertheless, the scheme moved forward and brought with it many indirect benefits to the territory as a whole.

Fairly general rioting broke out in Uganda on April 25 and lasted two to three days with sporadic incidents occurring until May 4. The riots followed on an expression by the kabaka of his inability to agree to certain demands put forward by a delegation representing the so-called Bataka party and the African Farmers' union. Five Africans were reported to have been shot and more than 1,300 people were arrested; numerous cases of arson, looting and theft of vehicles occurred. The governor brought into operation the Emergency Powers Order-in-Council of 1939, and called in military assistance from Kenya. On May 4 he announced the appointment of a commissioner to inquire into and report upon the origin, cause, purposes and development of the disturbances and the steps taken to deal with them and to make recommendations.

Finance and Trade.—Currency throughout British East Africa is controlled by the East African Currency board in London; the standard coin is the East African shilling, divided into 100 cents; as of Nov. 15, 1949, it was valued at 14 cents U.S.; circulation (Dec. 31, 1948): notes £16,857,840, coinage £8,655,646.

	Revenue	Expenditure	Imports 1948	Exports 1948
Kenya	£8,956,500*	£8,946,740*	£27,136,338§	£19,972,227
Somaliland	£525,495†	£545,357†	—	—
Tanganyika	£6,965,058‡	£6,381,964‡	£22,608,564	£16,923,394
Uganda	£6,842,071*	£6,348,304*	£9,271,287§	£17,197,716
Zanzibar	£901,208‡	£937,673‡	£2,699,717	£2,116,858

* 1949 estimate. † Actual, for the year ended June 30, 1948. ‡ 1948 actual.
§ "Retained" imports only.

Principal exports: Kenya—sisal, coffee, radium carbonate, hides and skins, tea; Somaliland—hides and skins; Tanganyika—sisal (£8,930,461 in 1948), cotton, diamonds, coffee; Uganda—raw cotton (£7,457,674 in 1948), coffee, cigarettes, sugar; Zanzibar—cloves (£1,000,404 in 1948), coconut oil.

FILMS OF 1949—*African Fauna; African Tribes* (Paul Hoefler Productions). (Jo. A. HN.)

British Empire. The governments of the British empire and the governors and premiers were as follows on Dec. 31, 1949:

British Empire

Country	Area sq. mi. (approx.)	Population* (000's omitted)	Capital	Status	Rulers, Governors and Premiers
Europe					
Great Britain and N. Ireland	93,667	50,213	London	Kingdom	George VI, King Prime Minister of Great Britain: C. R. Attlee Governor of Northern Ireland: Earl Granville Prime Minister of Northern Ireland: Sir Basil Brooke
Channel Islands	75	101	St. Helier St. Peter Port	Part of the United Kingdom	Jersey: Lt. Gov.: Sir A. E. Grasett Guernsey: Lt. Gov.: Sir Philip Neame
Gibraltar	2	24	Gibraltar	Colony	Gov.: Lt. Gen. Sir Kenneth Anderson
Isle of Man	221	51	Douglas	Part of the United Kingdom	Lt. Gov.: Sir Geoffrey Bromet
Malta	122	306†	Valletta	Self-governing colony	Gov.: Sir Gerald Creasy Prime Minister: Paul Boffa
Asia					
Aden and Perim	80	81		Colony	Gov.: Sir Reginald Champion
Aden Protectorate	112,000	650		Protectorate	
Bahrein Islands	213	125	Manama	Protectorate	Political agent: A. C. Galloway
British Borneo:					
North Borneo (with Labuan)	29,417	332	Sandakan	Colony	Gov.: Sir Ralph Hone
Brunei	2,226	41	Brunei	Protectorate	High Commissioner } vacant
Sarawak	50,000	550	Kuching	Colony	Governor }
Ceylon	25,332	7,177	Colombo	Dominion	Gov. Gen.: Lord Soulbury Prime Minister: Don Stephan Senanayake
Cyprus	3,572	460	Nicosia	Colony	Gov.: Sir Andrew Wright
Hong Kong	391	1,800	Victoria	Colony	Gov.: Sir Alexander Grantham
India	1,243,886	342,114	Delhi	Dominion	Gov. Gen.: Chakravarti Rajagopalachari Prime Minister: Pandit Jawaharlal Nehru
Malaya:					Commissioner-General for S.E. Asia: Malcolm Macdonald
Federation of Malaya	50,680	5,000	Kuala Lumpur	Protectorate	High Commissioner: Sir Henry Gurney
Singapore	282	964	Singapore	Colony	Gov.: Sir Franklin C. Gimson
Pakistan	337,524	73,321	Karachi	Dominion	Gov. Gen.: Khwaja Nazimuddin Prime Minister: Liaquat Ali Khan

British Empire (Continued)

Country	Area sq.mi. (approx.)	Population* (000's omitted)	Capital	Status	Rulers, Governors and Premiers
Africa					
Anglo-Egyptian Sudan	967,500	7,919	Khartoum	Condominium	Gov. Gen.: Sir Robert Howe
Basutoland Protectorate	11,716	636	Maseru	Protectorate	High Commissioner: Sir Evelyn Baring
Bechuanaland Protectorate	275,000	305	Mafeking	Protectorate	
Gambia	4,074	251	Bathurst	Colony	Gov.: P. Wyn Harris
Gold Coast, including British Togoland: 13,041 sq.mi.	91,843	4,118†	Accra	Colony and protectorate; Brit. Togoland: trust territory	Gov.: Sir Charles Arden-Clarke
Kenya	224,960	5,373†	Nairobi	Colony and protectorate	Gov.: Sir Philip Mitchell
Mauritius (and Dependencies)	807	456	Port Louis	Colony	Gov.: Sir Hilary Blood
Nigeria, including British Cameroons: 34,081 sq.mi.	372,674	24,000	Lagos	Colony and protectorate; Brit. Cameroons: trust territory	Gov.: Sir John Macpherson
Nyasaland	47,949	2,150	Zomba	Protectorate	Gov.: Sir Geoffrey Colby
Rhodesia, Northern	290,320	1,720	Lusaka	Protectorate	Gov.: Sir Gilbert McCall Rennie
Rhodesia, Southern	150,333	2,022‡	Salisbury	Self-governing colony	Gov.: Sir Noble Kennedy Prime Minister: Sir Godfrey Huggins
St. Helena, Ascension and Tristan da Cunha	126	5	Jamestown	Colony	Gov.: Sir George Joy
Seychelles	156	35	Victoria	Colony	Gov.: Percy Selwyn-Clarke
Sierra Leone	27,925	1,857†	Freetown	Colony and protectorate	Gov.: Sir George Beresford Stooke
Somaliland Protectorate	67,936	700	Berbera	Protectorate	Gov.: Gerald Reece
South-West Africa	317,725	369	Windhoek	Trust territory (under South Africa)	Administrator: Col. P. I. Hoogenhout
Swaziland	6,705	193	Mbabane	Protectorate	High Commissioner: Sir Evelyn Baring
Tanganyika	362,688	7,074†	Dar-es-Salaam	Trust territory	Gov.: Sir Edward Twining
Uganda	93,981	4,994†	Entebbe	Protectorate	Gov.: Sir John Hathorn Hall
Union of South Africa	472,550	12,112‡	Pretoria (seat of government) Cape Town (seat of legislature)	Dominion	Gov. Gen.: Maj. G. B. van Zyl Prime Minister: Daniel F. Malan
Zanzibar (and Pemba)	1,020	266†	Zanzibar	Colony and protectorate	Resident: Sir Vincent Glenday
America					
Bahamas	4,400	75	Nassau	Colony	Gov.: Sir George Sandford
Barbados	166	198	Bridgetown	Colony	Gov.: A. W. L. Savage
Bermuda	19	36	Hamilton	Colony	Gov.: Lt. Gen. Sir Alexander Hood
British Guiana	89,480	390	Georgetown	Colony	Gov.: Sir Charles Woolley
British Honduras	8,598	62	Belize	Colony	Gov.: Ronald H. Garvey
Canada	3,847,597	13,636‡	Ottawa	Dominion	Gov. Gen.: Viscount Alexander of Tunis Prime Minister: Louis St. Laurent
Falkland Islands	4,618	2	Port Stanley	Colony	Gov.: Sir Miles Clifford
Jamaica (and Dependencies)	4,765	1,364	Kingston	Colony	Gov.: Sir John Huggins
Leeward Islands	423	109	St. John	Colony	Gov.: Earl Baldwin of Bewdley
Trinidad and Tobago	1,980	590	Port of Spain	Colony	Gov.: Sir Hubert Rance
Windward Islands	821	256	St. George's	Colony	Gov.: R. D. H. Arundell
Australasia					
Commonwealth of Australia	2,974,581	7,581§	Canberra	Dominion	Gov. Gen.: W. J. McKell Prime Minister: Robert Gordon Menzies
Fiji	7,040	270	Suva	Colony	Gov.: Sir Brian Freeston
New Guinea	93,000	915	Port Moresby	Trust territory (under Australia)	Administrator: Col. J. K. Murray
New Hebrides	4,633	50	Vila	Franco-British condominium	British High Commissioner: Sir Brian Freeston; French High Commissioner: Pierre Cournarie
Nauru	8	3		Trust territory (under Australia)	Administrator: Mark Ridgway
New Zealand (and Dependencies)	103,935	1,861	Wellington	Dominion	Gov. Gen.: Sir Bernard Freyberg Prime Minister: Sidney George Holland
Norfolk Island	13	1		Australian dependency	Administrator: Alexander Wilson
Pacific Islands (Solomon, Gilbert and Ellice, Tonga, Pitcairn Isls.)	12,997	176		Colonies and protectorate	High Commissioner: Sir Brian Freeston
Papua	90,540	300	Port Moresby	Part of Commonwealth of Australia	Administrator: Col. J. K. Murray
Western Samoa	1,133	73	Apia	Trust territory (under New Zealand)	Administrator: F. W. Voelcker

*1948 est. if not otherwise stated. †1948 census. ‡1949 est. §1947 census.

British Guiana. British Guiana is a British colony on the northeast coast of the continent of South America. Area: 89,480 sq.mi. Pop. (1948 est.): 390,000. Chief towns (1946 census): Georgetown (cap., 73,541); New Amsterdam (9,578). Governor in 1949: Sir Charles Woolley.

History.—The legislative council approved during 1949 the colony's ten-year development plan, which called for an expenditure of 26,000,000 British West Indian dollars. Remarkable progress was announced in a campaign to rid the colony of malaria and it was claimed that 95% of the population was now free of its ravages. In July two United States experts arrived to study rice production methods and to advise the local government on its proposed program for large-scale expansion of the industry. Food subsidies were abolished in the spring when the only two remaining subsidies—on flour and salted fish—which had cost nearly B.W.I. $2,000,000 in 1948, were withdrawn: but following devaluation in September it was found necessary to reintroduce certain subsidies. The second goodwill meeting of the governors of the British, French and Dutch Guianas was held in Georgetown in February. The U.S. air force handed over Atkinson Field Air base (one of its wartime Caribbean bases) to the local government, which agreed to purchase 300 buildings and a large quantity of equipment for approximately B.W.I. $1,000,000; certain buildings remained U.S. property, but on loan to the local government. The governor announced that the secretary of state had promised to appoint a commission on constitutional reform in 1950.

Finance and Trade.—Currency: British West Indian dollar set at 4.8 to the £. On Nov. 14, 1949, the West Indian dollar was valued at 58.33 cents U.S. (Budget 1948 provisional figures): revenue B.W.I. $20,601,599; expenditure B.W.I. $19,616,692. Foreign trade (1948): imports B.W.I. $48,181,000; exports B.W.I. $36,993,859. Principal exports: sugar, bauxite, rum, rice, diamonds and timber. (Jo. A. Hn.)

British Honduras. A British colony in Central America bounded by Mexico and Guatemala. Area: 8,598 sq.mi. Pop. (1948 est.): 62,000. Chief towns (1946 census): Belize (cap., 21,886); Stann Creek (3,414).

History.—The claims of Guatemala to the territory continued during 1949 to give rise to some uncertainty as to its future status; a resolution in the legislative council stressed the people's loyalty to the British connection but at the same time urged upon the British government the imperative necessity of taking all proper steps to bring about the speedy determination of the claim made by the government of Guatemala. In a reply to this resolution the British government stated *inter alia* that, while remaining willing to submit the legal claim to the International Court of Justice for adjudication, "it remained inflexibly determined that, in the absence of a legal decision by the International Court that His Majesty has no legal claim to sovereignty over British Honduras, it will not countenance any change in the international status of the colony or any part of it."

The Hawkesworth bridge, a new suspension bridge 480 ft. long with a centre span of 280 ft., over the lower Belize river was opened, thus completing the all-weather road from the capital to the Guatemalan frontier. In general, the achievements in the development program were overshadowed by widespread unemployment due to the collapse of the mahogany and chicle industries.

Finance and Trade.—Currency: dollar, linked in value to the U.S. dollar and, as a consequence, not devalued with the remainder of the sterling area. Budget (1948): revenue $3,208,623; expenditure $3,394,916. Foreign trade (1948): imports $8,075,460; exports $6,152,010. Principal exports: timber, chicle and grapefruit juice. (Jo. A. Hn.)

British Malaya: *see* Malaya (Federation of) and Singapore.

British Political Parties: *see* Political Parties, British.

British Somaliland: *see* British East Africa.

British South African Protectorates.

Under this heading are grouped the three British protectorates of Basutoland, Bechuanaland and Swaziland, of which certain essential statistics are given in the table. High Commissioner in 1949: Sir Evelyn Baring.

History.—The year 1949 was one of continued progress with schemes financed under the Colonial Development and Welfare acts and, in Swaziland, of growing political activity of the native authority. The economic future of Swaziland was also brightened by the announcement of an 100,000 ac. afforestation scheme to be started by the Colonial Development corporation.

The territories attracted interest during 1949 because of the incidence of ritual murder in Basutoland, a crime of which 121 Basutos had been convicted during the past seven years, and announcement of the marriage between Seretse Khama, heir to the chieftainship of the Bamangwato tribe in Bechuanaland, and an English woman named Ruth Williams. This latter question, which was the subject of a special government inquiry, had repercussions in the Union of South Africa where, it was announced, the chief designate and his white wife had been declared "prohibited immigrants."

In October, D. F. Malan, the Union prime minister, said in a speech at Bloemfontein that he was preparing to make representations to the British government for the incorporation of the protectorates into the Union of South Africa. (*See* also South Africa, Union of.)

Basutoland.—Progress in the political sphere was marked by the increase to 24 of the number of the elected representatives in the Basutoland council. An endeavour was made to encourage an agricultural co-operative movement by the appointment of an official as registrar of co-operative societies. This step was expected to help a territory largely dependent upon pastoral and agricultural resources.

Education was popular with the Basutos and 75% of the children attended school. Expenditure on education was about one-fifth of revenue. Construction was started on the sixth government hospital. The number of patients attending all hospitals was double that of ten years before. Welfare societies, with community halls, were formed in each district. During 1949 the first of these, with a library, was opened.

Bechuanaland.—Schemes for surface-water conservation were approved. These aimed at constructing small stock dams and minor permanent works in existing waterways. Boring for water was also continued. A teacher training institute was planned to improve the standard of education in the villages. A secondary school, initiated by the Bamangwato tribe, under Chief Tshekedi Khama, was opened in its reserve.

Swaziland.—Under a native land settlement scheme valuable work was done, not only in settling landless families, but also in proper methods of land utilization and animal husbandry. More than 500 families were settled during 1947–49 and settlement for another 1,000 was planned. By voluntary contribution the Swazi nation raised funds to purchase 73,900 ac. from European owners.

A company, named Peak Timbers, Ltd., began commercial afforestation of an area of 57,000 ac. purchased by them in 1946 in the Pigg's Peak district. Production at the Havelock asbestos mine reached 218,608 tons for the year ending March 1948. The campaign against Nagana (animal trypanosomiasis) met with considerable success through the help of bulldozers for bush clearing and through aerial spraying.

(W. R. Gn.)

British South African Protectorates

Area (in sq.mi.)	Population (1948 est.)	Capital	Trade with Union of South Africa and the Rhodesias (1947–48)	Road and Rail (1947–48)	Budget (1947–48)	Education (1947–48)
Basutoland c.11,716	636,000	Maseru	imp. £1,807,246 exp. £1,336,269	rds. 502 mi. ry. none	rev. £900,654 exp. £886,937	Native pupils 87,038 Europeans 96
Bechuanaland c. 275,000	305,000	Mafeking	imp. £1,176,037 exp. £753,788	rds. 2,048 mi. ry. 394 mi.	rev. £483,029 exp. £475,502	Native pupils 16,346 Europeans 195
Swaziland 6,705	193,000	Mbabane	(In customs union with South Africa) exp. £1,417,629	rds. 1,104 mi. ry. none	rev. £471,412 exp. £523,335	Native pupils 11,012 Europeans 552

British West Africa.

The term British West Africa includes the four British colonial territories on the west coast of Africa, viz.: Nigeria, colony and protectorate with which are administered the Cameroons under United Kingdom trusteeship; the Gold Coast, including the colony of that name, Ashanti, the Northern Territories and Togoland under United Kingdom trusteeship; Sierra Leone, colony and protectorate; and Gambia, likewise a colony and protectorate. Areas and populations were as follows:

	Area (in sq.mi.)	Population	
		1931 census	1948 census
Nigeria	372,674	20,702,756	24,000,000*
Gold Coast	91,843	3,163,568	4,118,450
Sierra Leone	27,925	1,768,480	1,857,275
Gambia	4,074	199,520	251,000*

*Estimate.

Governors (Dec. 31, 1949): Nigeria, Sir John Macpherson; Gold Coast, Sir Charles Arden Clarke; Sierra Leone, Sir G. Beresford Stooke; Gambia, P. Wyn Harris.

History.—Public interest in West Africa in 1949 centred almost exclusively in the discussion of constitutional changes. In Nigeria in March the legislative council unanimously approved the proposals of a select committee of its members (set up on a suggestion made by the governor the previous year and including all the unofficial members) that the review of the present constitution should consist of conferences at three levels: the provincial, the regional and the centre. Discussions began immediately and were continued throughout the year. Provincial conferences considered the views of village and divisional meetings and of representative organizations; the views formulated at provincial conferences were then, in turn, considered at regional conferences, at which level conferences for Lagos and the colony were included. The views of these regional conferences were incorporated in a series of resolutions, published in October, and were then submitted to a drafting committee to prepare a statement for consideration by a general conference consisting of all unofficial members of the legislative council and representatives of the regional, Lagos and colony conferences. Meanwhile, in September the governor announced that, pending a decision on constitutional changes, it had been agreed that African representation on the executive council should immediately be resumed and strengthened and he had accordingly appointed four Nigerians.

In the Gold Coast in January the governor set up an all-African committee of 39 members under the chairmanship of Justice J. H. Coussey to examine proposals for constitutional and political reform. Its report, unanimous on the majority of its principal recommendations, was published in October. After declaring that the whole institution of chieftaincy was so closely bound up with the life of the communities that its disappearance would spell disaster, the committee recommended (1) a complex system of local government, in part utilizing the existing native authorities but superimposing a democratic framework by means of popular elections; (2) the establishment of four regional councils with wide powers; (3) that the executive council should be entirely remodelled as the chief instrument of policy, responsible to the proposed house of assembly and not to the governor, and should consist of the governor as chairman, not more than three official members, and upward of eight unofficial members (one to be styled "leader" and the others "ministers"); and it expressed a slight preference for a bicameral legislature. In a statement published simultaneously with the report the British government both welcomed and accepted its recommendations in general; but it favoured a unicameral legislature and stated its inability at this stage to accept the suggestion, in the form proposed, that the executive council should be collectively responsible to the legislative assembly and not to the governor.

Meanwhile, on opening the Gold Coast legislative council on Oct. 11 the governor announced that he had appointed E. C. Quist, an unofficial member, to be president for the remainder of the life of the council.

In Sierra Leone the constitutional changes approved in 1948 were not in fact proceeded with, a motion in the legislative council in Dec. 1948 having called for a further review of the proposals. In June the governor published new proposals recommending an executive council of four official and four unofficial members, the latter drawn from, and appointed by the governor after consultation with, the legislative council; the executive council to be responsible, as a body, for advising the governor on all major matters of policy and the four unofficial members each to take a special interest in a group of departments with a view to holding portfolios; the proposals also covered the development of local government, regarding which the governor stressed the need for a substantial measure of decentralization. It was suggested that a committee (presided over by an independent chairman and representative of the colony, the protectorate and the executive) should consider these new proposals.

The report of three scientists, nominated by the United Nations, who visited the Gold Coast in Nov.–Dec. 1948 was published in January and confirmed that swollen shoot threatened the very existence of the cocoa industry of the Gold Coast and that the cutting out of diseased trees was the only measure known for its control. In February the publication of new regulations for immigration procedure into the Gold Coast raised an outcry in Great Britain; and following protests in the British parliament and the local legislative council, they were withdrawn and redrafted.

It was announced in July that the Gold Coast government had placed a contract for certain improvements and extensions to Takoradi harbour at an expected cost of £2,250,000. Work continued on the construction of Freetown's deep-water quay. A panel of experts arrived in the Gold Coast in October to survey the industrial and transport potentialities of the Volta river.

A WEST AFRICAN CHIEFTAIN arriving at Accra, capital of the Gold Coast, for the durbar at which the newly elected Ga chieftain was presented by the Ga state council to British governor Sir Gerald Creasy in Feb. 1949. Ga is a tribe in the territory near Accra

In Nigeria in August the unsatisfactory labour situation on the railways led to the appointment of a commission of inquiry, which was boycotted by the trade unions. In November a strike at the government colliery at Enugu gave rise to serious disturbances in which a number of Africans were killed.

Finance and Trade.—The unit of currency throughout British West Africa is the pound, maintained at par with sterling.

	Gambia	Gold Coast	Nigeria	Sierra Leone
Revenue	£866,900*	£11,639,324†	£27,940,940‡	£4,260,145§
Expenditure	£1,014,097*	£10,178,802†	£27,230,290‡	£2,666,444§
Imports (1948) . .	c. £1,938,000	£29,158,749	£41,777,239	£4,979,350
Exports (1948) . .	c. £1,706,000	£31,615,712‖	£38,327,220‖	£4,164,566¶

*1948 †1948–49 ‡1949–50 est. §1949 est.

‖The values of cocoa recorded in the export statistics are the f.o.b. cost prices to the Gold Coast and Nigerian Cocoa Marketing boards and thus exclude the profits realized by the boards on sale to overseas purchasers. In 1948 these profits amounted in the Gold Coast alone to £20,013,017.

¶The value of the diamond exports (461,685 carats) was not quoted. Palm kernels and palm oil are quoted at f.o.b. cost prices.

The principal exports were: Gambia: peanuts (£1,628,002 in 1948); Gold Coast: cocoa, gold, manganese and timber; Nigeria: cocoa, peanuts, palm oil and kernels, tin, and hides and skins; Sierra Leone: palm kernels, diamonds and iron ore. (Jo. A. Hn.)

British West Indies: *see* Bahamas; Barbados; Jamaica; Leeward Islands; Trinidad and Tobago; Windward Islands.

Broadcasting: *see* Radio; Television.

Brookings Institution: *see* Societies and Associations.

Brozovich or Broz, Josip (Tito): *see* Tito (Josip Brozovich or Broz).

Brunei: *see* British Borneo.

Brussels, Treaty of: *see* European Union.

Bubonic Plague: *see* Plague, Bubonic and Pneumonic.

Budget, National.

United States.—The U.S. budget submitted to the congress by President Harry S. Truman on Jan. 9, 1950, recommended expenditures of $42,439,000,000 for the fiscal year ending June 30, 1951. This total was $858,000,000 less than estimated expenditures for fiscal 1950. On the basis of existing tax laws and continuing high levels of economic activity, revenues amounting to $37,306,000,000 were expected for fiscal 1951—$457,000,000 less than in the previous year.

" 'TOO MANY BYRDS,' " a reference to policy differences between Pres. Truman and Sen. H. F. Byrd of Virginia. The senator was strongly critical of government expenditures in 1949, while the president was quoted as saying there were "too many Byrds in congress." Cartoon by Seibel of the *Richmond Times-Dispatch*

Expenditures and revenues for the fiscal year 1951 as presented in the budget would result in a deficit of $5,133,000,000 compared with an anticipated deficit of $5,534,000,000 for fiscal 1950. The president stated that he would shortly recommend to the congress certain adjustments in tax laws that would produce a moderate increase in revenue, not reflected in the budget.

The 1951 budget, the president noted, was "dominated by financial requirements to pay the costs of past wars and to achieve a peaceful world." Expenditures for these purposes—national defense, international affairs and finance, veterans' services and benefits and interest on the public debt—were estimated at a total of about $30,000,000,000, or 71% of the total budget. This represented a reduction of about $1,800,000,000 from the estimated total outlay for these four categories in fiscal year 1950.

The federal government's two largest sources of revenue—income taxes on individuals and on corporations—were expected under existing law to provide revenues of $28,704,000,000 in fiscal year 1951, comprising three-fourths of the estimated total of all budget receipts. Individual income taxes were estimated at $18,246,000,000 for fiscal 1951, as compared with $17,971,000,000 in the preceding year. As a reflection of the reduction in corporate profits from the calendar year 1948 peak, collections from corporate income taxes were expected to decline from $11,075,000,000 to $10,458,000,000 over the two fiscal years. Excise taxes and miscellaneous receipts, the other major sources of federal revenue, amounted to $8,798,000,000 in the 1951 budget. This total was about $125,000,000 less than in the previous year because of a further drop in sales of surplus war property, included in the category of miscellaneous receipts.

National Defense.—The estimate of $13,545,000,000 presented for outlays on national defense comprised one-third of all federal budget expenditures. This was about $400,000,000 higher than national defense expenditures in fiscal 1950. The increase stemmed almost entirely from commitments made under authorizations previously approved by the congress, and the president noted that expenditures in subsequent years would reflect the sizable reduction in new obligational authority requested for 1951.

Veterans' Services and Benefits.—Veterans' programs were expected to require expenditures of $6,080,000,000 in fiscal 1951, a drop of $825,000,000 from the level of the preceding year. The budget expenditures for fiscal years 1950 and 1951 did not reflect the initial dividend, estimated at about $2,800,000,000, to be paid from the national service life insurance fund. About $2,200,000,000 was scheduled for disbursement in fiscal 1950 and the balance in 1951 or later.

International Affairs and Finance.—Expenditures for international activities were placed at $4,711,000,000 in the 1951 budget. This was about $1,300,000,000, or one-fifth, less than estimated expenditures in fiscal 1950. The reduction reflected chiefly the declining costs of the European Recovery and other recovery and relief programs. The budget included, as proposed legislation, an initial outlay of $25,000,000 for furnishing technical assistance to economically undeveloped areas (the Point Four program). Expenditures under the Mutual Defense Assistance pact of 1949 for supplying arms to the North Atlantic treaty nations and for rendering military assistance to Greece, Turkey and certain other areas in the middle and far east were estimated to require $645,000,000 in fiscal year 1951. Expenditures for foreign military aid amounted to $355,000,000 in the previous year.

Social Welfare, Health and Security.—In his budget message the president made broad recommendations under the general category of social welfare, health and security. He urged the congress to enact legislation to expand and improve the old-age and survivors' insurance system in accordance with his previous recommendations. Nearly all gainfully employed people, including farmers and the self-employed, would be covered; the scale of benefits would be increased sharply; and disability would be added to the risks covered. To finance the additional costs, the statutory increase from 1½% to 2% in the old-age and survivors' insurance tax rate on employers and employees, scheduled for Jan. 1, 1952, would be moved up to Jan. 1, 1951. The base of tax levy—the first $3,000 of earnings of each employee in any year—would be raised to $4,800.

In addition to this expansion of the old-age and survivors' insurance program, the president recommended (1) an extension and improvement in the program of federal grants to states for public assistance; (2) increased federal assistance to local health services and to medical and related schools to encourage the training of additional medical personnel; and (3) the adoption of legislation providing for a comprehensive system of prepaid medical care insurance, to be geared in with the other social insurance programs and financed mainly by employer and employee contributions.

The president's proposals would for the most part be financed through special taxes, with receipts and payments being handled through government trust funds. The proposals added $271,000,000 to budget expenditures in 1951, of which amount $200,000,000 was for grants to states for public assistance and $67,000,000 for health programs. These increases in the fields of public assistance and public health, together with the larger outlays required in these two fields under existing legislation, were expected to cause budget expenditures for social welfare, health and security to rise $417,000,000 in the fiscal year 1951, to a total of $2,714,000,000.

Housing and Community Development.—Budget outlays for housing and community development were estimated at $1,329,000,000 for fiscal 1951, as compared with $1,006,000,000 in the previous year. A large part of the increase was accounted for by the requirements of the public housing and urban redevelopment programs enacted into law during fiscal 1950. The major impact of these programs on budget expenditures, however, would not be reflected until succeeding years.

The only new federal aid to private housing recommended in the budget was for assistance to co-operatives and nonprofit corporations in building and managing housing projects for middle-income families. Expenditures of $50,000,000 were recommended for this purpose in fiscal 1951, when the program would be in an experimental stage.

Education and General Research.—Under the category of education and general research it was recommended that expenditures be increased from $125,000,000 to $434,000,000. By far the largest part of the increase was accounted for by proposed grants of $290,000,000 to the states "in support of the maintenance and operation costs of a basic minimum program of elementary and secondary education." Another legislative proposal by the president called for an outlay of $22,000,000 for grants to states for surveying their need for school facilities and for the construction of school buildings in areas where federal activities had been responsible for increased enrolments.

Agriculture and Agricultural Resources.—Expenditures for operating government programs relating to agriculture and agricultural resources were estimated at $2,206,000,000 for fiscal 1951. The decline from the 1950 figure of $2,671,000,000 reflected the anticipation that price support outlays by the Commodity Credit corporation could be reduced. Apart from price support outlays, agricultural expenditures in 1951 were expected to be larger because of the higher level of loan disbursements for rural electrification and the increased outlays scheduled for the conservation and use program (including the administering of acreage allotments and marketing quotas) and for the removal of surplus agricultural commodities.

Natural Resources.—The government's programs to conserve natural resources were estimated to require expenditures of $2,218,000,000 in fiscal year 1951, an increase of $373,000,000 over the 1950 total. More than one-third of the increase was attributable to atomic energy, for which $817,000,000 was budgeted for fiscal 1951. The balance of the increase stemmed mainly from the requirements of projects under way in the fields of flood control and reclamation.

Transportation and Communication.—Federal expenditures for transportation and communication were expected to decline from $1,894,000,000 in fiscal 1950 to $1,682,000,000 in fiscal 1951. The decline assumed a reduction of nearly $400,000,000 in the postal deficit, in line with the president's recommendation for an upward revision in postal rates.

Finance, Commerce and Industry.—Total federal expenditures for finance, commerce and industry programs were estimated at $212,000,000 in fiscal 1951, as compared with $225,000,000 in 1950. The major part of the reduction was in outlays for rent and export controls. Business loans and guarantees by the Reconstruction Finance corporation accounted for about three-fourths of the 1951 expenditures total.

Labour.—For the fiscal year 1951 expenditures required for administering the government's labour programs were placed at $243,000,000. About 70% of this total consisted of grants to states for administration of the federal-state employment service and unemployment compensation system.

General Government.—Expenditures for general government functions in fiscal 1951 were included in the budget at $1,267,000,000. The increase over the 1950 total of $1,223,000,000 was mainly for further strengthening of the system of federal tax collection, for the government's payment to its civilian employees' retirement system and for acquiring sites and drawing plans for public buildings.

Interest on the Public Debt.—Payment of interest on the public debt was expected to amount to $5,625,000,000 in fiscal

Table I.—*Summary of Budget Receipts and Expenditures, United States Fiscal Years 1949 through 1951*

Based on existing and proposed legislation

Description	Actual, 1949	Estimate, 1950	Estimate, 1951
Budget receipts:			
Direct taxes on individuals:			
Individual income taxes	$17,929,000,000	$17,971,000,000	$18,246,000,000
Estate and gift taxes	797,000,000	697,000,000	692,000,000
Direct taxes on corporations:			
Corporations income taxes	11,343,000,000	11,075,000,000	10,458,000,000
Excess profits taxes	211,000,000	100,000,000	60,000,000
Excise taxes	7,551,000,000	7,631,000,000	7,642,000,000
Employment taxes:			
Existing legislation	2,487,000,000	3,048,000,000	3,343,000,000
Proposed legislation:			
Medical care insurance	—	—	−250,000,000
Improvement of old age and survivors insurance	—	—	−1,200,000,000
Customs	384,000,000	375,000,000	375,000,000
Miscellaneous receipts:			
Existing legislation	2,072,000,000	1,288,000,000	1,096,000,000
Proposed legislation	—	—	60,000,000
Deduct:			
Appropriation to trust funds:			
Existing legislation	−1,690,000,000	−2,245,000,000	−2,515,000,000
Proposed legislation	—	—	1,450,000,000
Refunds of receipts	−2,838,000,000	−2,177,000,000	−2,151,000,000
Total budget receipts	38,246,000,000	37,763,000,000	37,306,000,000
Budget expenditures:			
National defense	11,914,000,000	13,148,000,000	13,545,000,000
Veterans' services and benefits	6,669,000,000	6,905,000,000	6,080,000,000
International affairs and finance	6,462,000,000	5,964,000,000	4,711,000,000
Social welfare, health and security	1,907,000,000	2,297,000,000	2,714,000,000
Housing and community development	282,000,000	1,006,000,000	1,329,000,000
Education and general research	70,000,000	125,000,000	434,000,000
Agriculture and agricultural resources	2,512,000,000	2,671,000,000	2,206,000,000
Natural resources not primarily agricultural	1,512,000,000	1,845,000,000	2,218,000,000
Transportation and communication	1,622,000,000	1,894,000,000	1,682,000,000
Finance, commerce and industry	120,000,000	225,000,000	212,000,000
Labour	193,000,000	219,000,000	243,000,000
General government	1,170,000,000	1,223,000,000	1,267,000,000
Interest on the public debt	5,352,000,000	5,725,000,000	5,625,000,000
Reserve for contingencies	—	50,000,000	175,000,000
Adjustment to daily treasury statement basis	272,000,000	—	—
Total budget expenditures	40,057,000,000	43,297,000,000	42,439,000,000
Excess of budget expenditures	1,811,000,000	5,534,000,000	5,133,000,000

Detail will not necessarily add to totals because of rounding.

Table II.—*Government Receipts and Expenditures—Great Britain*

(£ millions)

Receipts	Exchequer Receipts, 1948-49	Estimate, 1949-50	Expenditures	Exchequer Issues, 1948-49	Estimate, 1949-50
Income tax	1,368	1,490	Debt charge	500	485
Surtax	98	105	Payments to North Ireland exchequer	32	30
Death duties	177	176	Other	10	12
Stamps	56	49	Total consolidated fund services	542	527
Profits tax and excess profits tax	279	240			
Other inland revenue duties	1	1	Supply services:		
Special contribution	79	25	Defense votes	753	760
Total inland revenue	2,058	2,086	Civil votes (excluding ministry of supply [defense])	1,845	1,983
Customs	823	830	Customs and excise, inland revenue and balance of post office votes	36	38
Excise	734	663			
Total customs and excise	1,557	1,493	Total supply services	2,634	2,781
Motor vehicle duties	53	54	Total ordinary expenditure	3,176	3,308
Total receipts from taxes	3,668	3,633	Surplus	831	470
Sales of surplus war stores	99	44	Total	4,007	3,778
Surplus receipts from trading services	28	18	Self-balancing revenue and expenditure:		
Broadcast receiving licences	12	12	Post office	153	160
Crown lands	1	1	Excess profits tax, postwar refunds (part deducted for tax)	9	6
Receipts from sundry loans	18	20			
Miscellaneous	181	50			
Total ordinary revenue	4,007	3,778			

1951. This was lower than the total of $5,725,000,000 in fiscal 1950 because of a change in reporting methods that caused a nonrecurring addition of more than $200,000,000 in 1950. The new method, effective in fiscal 1950, requires the reporting of all interest payments when they become payable rather than when actually paid. Apart from this nonrecurring item, total interest payments showed a further increase. This was attributable to higher accrual rates on savings bonds outstanding; an increase in the amount of special issues, which bear relatively high rates, held by government trust funds; and a rise in the volume of interest-bearing debt because of the 1950 and 1951 budget deficits. (*See* also DEBT, NATIONAL; INCOME AND PRODUCT, U.S.; TAXATION; UNITED STATES.)

Great Britain.—The 1949–50 budget of Great Britain, presented in April 1949, showed total receipts amounting to £3,778,000,000, as compared with £4,007,000,000 in fiscal year 1948–49. The anticipated decline in total receipts was concentrated in nontax revenues.

Total budget expenditures were estimated to rise from £3,176,000,000 in fiscal 1948–49 to £3,308,000,000 in 1949–50. The increase was attributable mainly to the provision of larger outlays for social services.

A surplus of ordinary receipts over ordinary expenditures amounting to £470,000,000 was shown by the budget for 1949–50. In the preceding year there was a surplus of £831,000,000.

Devaluation of the pound, which occurred some months after the 1949–50 budget had been submitted, led to economy measures designed to lessen domestic inflationary pressures generated by devaluation. The British government in late Oct. 1949 announced planned expenditure reductions totalling £80,000,000 for the rest of the fiscal year and the imposition of a higher tax on distributed profits that was expected to yield additional revenue of £10,000,000. The previously anticipated budget surplus of £470,000,000 thus would be increased to £560,000,000. (For other national budgets, *see* under specific country.)

(C. F. Sz.)

Buhl Foundation: *see* SOCIETIES AND ASSOCIATIONS.

Building and Construction Industry.

The postwar construction boom in the United States continued unabated during 1949, establishing new records for dollar expenditures and for the number of new homes on which work was started. Total expenditures for new construction reached the all-time high of $19,329,000,000, which exceeded by more than $500,000,000 the 1948 record of $18,775,000,000. Building of new homes passed the 1,000,000 mark for the first time in the nation's history. The physical volume of new 1949 construction probably was even greater than the $500,000,000 increase in expenditures would indicate since unit costs were somewhat lower than in the previous year.

That new building reached record levels in 1949 was the result of a $1,000,000,000 increase in public construction of all types by federal, state and local governments. Private construction amounted to $14,000,000,000, which was $500,000,000 lower than in the preceding year. The drop was more than offset by the increase in public building to $5,300,000,000, which was 25% higher than had been expended during the previous year. More than half of this increase resulted from expanded programs of school and hospital construction.

Although 1949 home building achieved a record in number of new units, total expenditures amounted to $7,000,000,000, approximately 3% below the 1948 figure. This fact was accounted for by somewhat lower construction costs, the building of a larger proportion of less expensive dwellings and completion work remaining to be done at the year's end on the large volume of late home building starts. Expenditures for public housing (homes for low-income families, financed and subsidized by federal, state or local government agencies) more than doubled in the year although the volume of such construction was still relatively small. The large-scale public housing program authorized by congressional enactment of the Housing Act of 1949 did not begin to make itself felt in 1949.

Increased construction was also marked in the field of institutional building such as churches, privately supported hospitals, recreational buildings and private (including parochial) schools. Privately owned electric and gas companies also substantially increased their construction activities.

The drop in privately financed building was most marked in commercial and industrial construction. Possibly this was a reflection of some uncertainty as to the business outlook which prevailed in the early months of the year. A more optimistic tone at the end of 1949 was accompanied by the negotiation of a large volume of construction contracts in this category.

The growing importance of government building in the nation's total construction was evident in the early months of the year. Over-all activity was maintained at 1948 figures for the first five months, but only as a result of substantially increased expenditures for construction by the several levels of government. Road building, reclamation, flood control, schools and hospitals accounted for most of it with state and local governments supplying more than half.

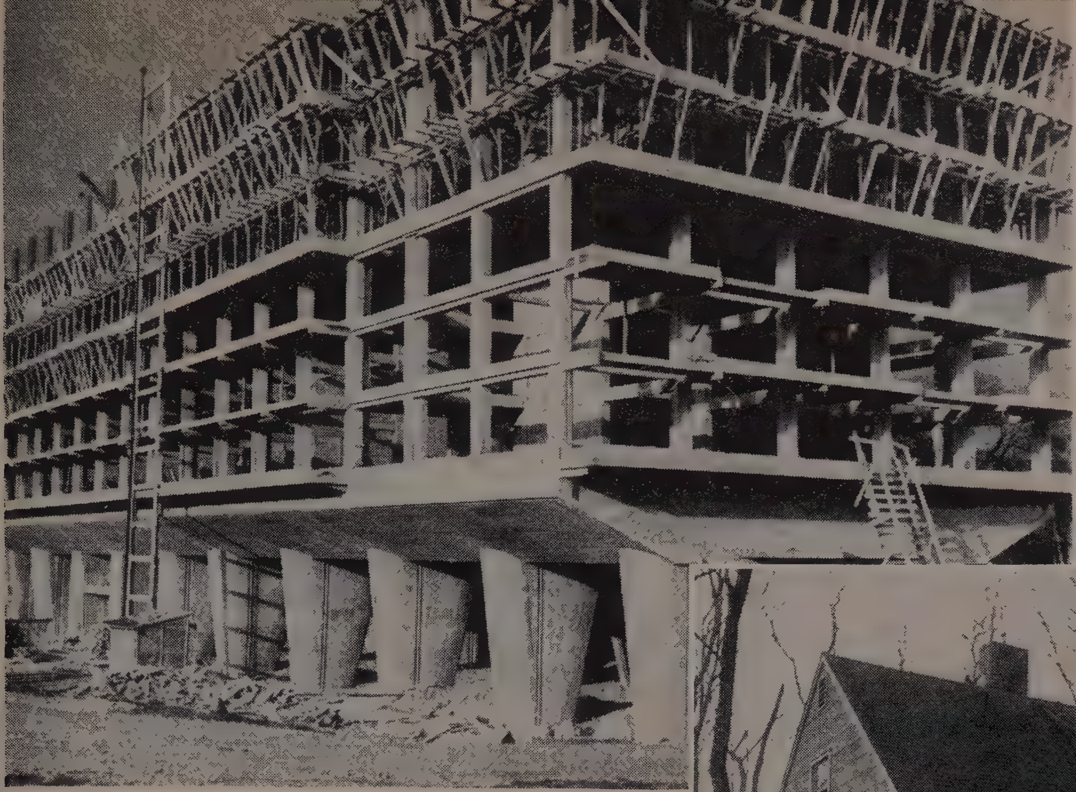
At mid-year, house building began to assume record breaking proportions. For six successive months the number of new dwelling units put under construction eclipsed all previous figures. Slightly lower costs, easing of mortgage financing, greater emphasis on lower-price homes and an expanded rental-housing program all contributed to this result.

Growing belief that construction costs were levelling off probably played a part also in stimulating the contraseasonal rush of building. Material costs had begun to drop in Nov. 1948 and continued easing downward through the first half of 1949. Actual price reductions for major components, except lumber, were modest. Lumber, which had shown the biggest postwar increase, was freely available at substantially lower prices. In the bureau of labour statistics index of wholesale prices, lumber, which in Aug. 1948 reached a high of 319.9 (1926=100), had dropped to 277.4 by July 1949, hovered there for two months and then moved up to 279.6 in September.

Equally as important as price reductions for materials were the return of competitive bidding for construction contracts on a fixed price basis, an ample supply and ready flow of materials which made for more efficient and speedier construction, and increased labour productivity with fewer premium payments above the union wage scale.

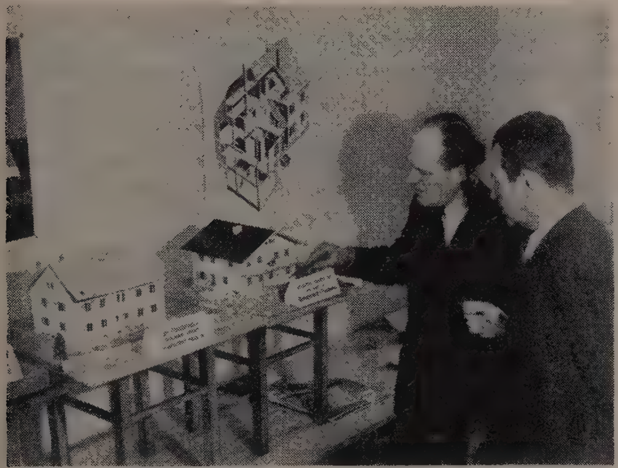
The part each of these factors played is difficult to determine, but there was ample evidence that the cost peak had been passed. Residential construction costs were down 10%, according to Melvin J. Baker, chairman of the Construction Industry Information committee, and industrial building 5%. Other estimates ranged from 8% to 15%. In July the Detroit (Mich.) board of education, taking a second set of bids on a school addition, found a drop of 30% from the preceding year when the work was first contemplated. The state commissioner of housing in New York, in passing on bids for a state-aided housing project, found a reduction of 18% as compared with bids on a similar project authorized ten months before.

Building's slow start in 1949 was reflected in employment figures. In May construction contractors had 2,010,000 employees at work which represented a gain of 75,000 over the preceding month but was still 42,000 less than the figure for



Left: THE "VERTICAL COMMUNITY," a 27-story block of apartments under construction in Marseilles, France, in 1949. Designed by Le Corbusier, it stood on 36 great pylons (to give lightness) and was to house 1,600 persons, as well as community centres, shops, playgrounds, a post office, etc.

Above: RUSH OF BUYERS waiting to inspect a model of a popular-priced ($7,990) two-bedroom house being mass-produced in Long Island, N.Y., early in 1949. More than 700 of these houses were sold the first week they were on the market



Above: WILLI MESSERSCHMITT (left), former designer of German aircraft, shown here with house models he designed in 1949 for prefabrication in Germany; supports were to be made of corrosion-proof steel, with wall and floor plates of gas concrete *(schaumbeton)*

Below: BLOCK OF APARTMENTS built to government specifications at Hornsey in the London area. Almost 1,000,000 new homes had been completed in Britain by 1949 to replace the more than 4,000,000 dwellings damaged or destroyed during World War II

Table I.—*New Construction Activity, Continental United States**

(In millions of dollars)

Type of construction	1949 Dec.	1949 Nov.	Dec. 1948	12 months 1949	12 months 1948	Per cent change: Dec. 1949 from Nov. 1949	Per cent change: Dec. 1949 from Dec. 1948	Per cent change: 12 months 1949 from 12 months 1948
Total new construction	1,612	1,767	1,447	19,329	18,775	− 9	+ 11	+ 3
Total private	1,225	1,295	1,129	14,059	14,563	− 5	+ 9	− 3
Residential (excluding farm)	690	715	547	7,025	7,223	− 3	+ 26	− 3
Nonresidential building	261	266	305	3,178	3,578	− 2	− 14	− 11
Industrial	68	68	114	974	1,397	0	− 40	− 30
Warehouses, office and loft buildings	26	25	31	294	323	+ 4	+ 16	− 9
Stores, restaurants and garages	58	61	62	707	901	− 5	− 6	− 22
Other nonresidential buildings	109	112	98	1,203	957	− 3	+ 11	+ 26
Religious	30	32	27	338	236	− 6	+ 11	+ 43
Educational	23	23	24	255	239	0	− 4	+ 7
Hospital and institutional	24	23	10	199	116	+ 4	+140	+ 72
Social and recreational	19	20	21	246	211	− 5	− 10	+ 17
Remaining types†	13	14	16	165	155	− 7	− 19	+ 6
Farm construction	15	25	13	450	500	−40	+ 15	− 10
Public utility	259	289	264	3,406	3,262	−10	− 2	+ 4
Railroad	31	34	33	389	379	− 9	− 6	+ 3
Telephone and telegraph	42	43	56	575	713	− 2	− 25	− 19
Other public utility	186	212	175	2,442	2,170	−12	+ 6	+ 13
Total public	387	472	318	5,270	4,212	−18	+ 22	+ 25
Residential	22	24	7	215	85	− 8	+214	+153
Nonresidential building	142	151	110	1,665	1,057	− 6	+ 29	+ 58
Educational	77	78	61	850	567	− 1	+ 26	+ 50
Hospital and institutional	41	44	27	455	219	− 7	+ 52	+108
Other nonresidential buildings	24	29	22	360	271	−17	+ 9	+ 33
Military and naval	9	12	9	120	137	−25	0	− 12
Highway	92	145	83	1,670	1,585	−37	+ 11	+ 5
Sewer and water	46	50	42	570	481	− 8	+ 10	+ 19
Miscellaneous public service enterprises	6	8	5	95	108	−25	+ 20	− 12
Conservation and development	56	65	50	745	597	−14	+ 12	+ 25
All other public	14	17	12	190	162	−18	+ 17	+ 17

*Joint estimates of the U.S. department of commerce and the U.S. department of labour.
†Includes hotels and miscellaneous.

May 1948. It was the first time in four years that contract construction employment failed to show a gain when compared with the same month of the preceding year. June's total was likewise below the same month in 1948 as were the comparable figures for July, August and September. By December, however, employment was 2,109,000, the highest level for that month in the ten years for which bureau of labour statistics records were available.

Union wage rates appeared to reach a plateau. The bureau of labour statistics reported in October that wage scales rose 1% between July 1 and Oct. 1, in the seven major building crafts, according to a survey of 85 cities. In the same period in 1948 the increase was 2%. During the first nine months of 1949 wage scales rose 3% as compared with an increase of 8% in the first nine months of 1948. As of Oct. 1, the bureau of labour statistics estimated the average basic wage scale of all union construction workers at $2.20 an hour.

The problem of jurisdictional disputes among the building trades, long the cause of costly work stoppages, seemed a step nearer solution. In May 1948 the Building Trades department of the American Federation of Labor joined with the Associated General Contractors in setting up the National Joint Board for the Settlement of Jurisdictional Disputes, clothing it with sufficient authority to handle such problems independently of the National Labor Relations board (NLRB). In 1949 this joint board was given additional power to keep union members on the job while it was determining just which craft should perform a disputed piece of work. The joint board was authorized likewise to make "job decisions" which would allocate the work in question insofar as a specific construction job was concerned without thereby establishing a precedent for other jobs.

Late in November trade unions and employers joined in another move of major importance directed at untangling the legal snarl into which their relationships had been thrown by the enactment of the Taft-Hartley labour law. The A.F. of L.'s Building and Construction Trades council, speaking for 19 major unions, and a group of employer organizations, headed by the Associated General Contractors, who collectively did about 80% of the nation's construction work, appealed to the National Labor Relations board for a blanket exemption for their industry from the Taft-Hartley law's bargaining election requirements. Strict application of these requirements, they urged, would destroy long-established collective bargaining practices in the industry and interfere with construction. Under the law unions could not engage in collective bargaining for their members or make union shop agreements until such elections had taken place.

Table II.—*Estimated Increases in Union Wage Rates, and Rate Levels in 85 U.S. Cities*

Trade	Average amount of increase July 1, 1949 to Oct. 1, 1949 (Per cent)	Average amount of increase July 1, 1949 to Oct. 1, 1949 (Cents per hour)	Rate levels Oct. 1, 1949 Low	Rate levels Oct. 1, 1949 Average	Rate levels Oct. 1, 1949 High
Bricklayers	0.4	1.2	$2.13	$2.75	$3.25
Carpenters	1.2	2.8	1.63	2.28	3.00
Electricians	.6	1.6	1.75	2.50	3.00
Painters	.4	.9	1.38	2.20	2.50
Plasterers	.3	.8	2.00	2.68	3.25
Plumbers	.5	1.2	1.90	2.53	3.00
Building labourers	1.5	2.2	.75	1.49	2.13

The difficulty of holding elections in this industry was at the root of the problem. Construction workers moved constantly from job to job and often followed their work from city to city. The jobs were of relatively short duration and the group of individuals employed varied with each job. Elections therefore, meant little in comparison with an election in a factory having normal labour turnover. In fact, NLRB recognized these difficulties and gave up trying to hold the elections. The building trades unions continued, of course, to bargain collectively and to enforce the closed shop. They wanted to make it legal and so did the employers.

Whether NLRB could resolve the question without further guidance from congress was the question. The Wagner act which preceded the Taft-Hartley law, specifically exempted the construction industry but the temper of congress when passing the superseding legislation made it quite clear that the industry was to be included.

Rebuilding worn-out and decayed older sections of cities (urban redevelopment) which had long been counted on to provide a very substantial market for the construction industry, made important headway during the year but was still some distance from actual rebuilding operations on a large scale. Individual states, beginning with New York in 1941, enacted redevelopment laws until, in 1949, 26 could extend some form of assistance to such projects. Nevertheless, redevelopment made little headway. The principal reasons assigned in a poll of 86 experts representing government, investors, city planners and authorities on housing, were high building costs and the belief that they would come down, insufficient subsidies or tax-exemption inducements and uncertainty over general economic conditions.

The urban redevelopment program included in the Housing Act of 1949 was designed to supply the needed stimulus. Under its provisions the federal government set up a loan fund of $1,000,000,000 to enable municipalities to acquire blighted areas so that they might be replanned and rebuilt. More important still was the accompanying authorization of a fund of $500,000,000 to be expended over a period of five years for outright grants to localities to help absorb the excess cost of such sites in comparison with open land on the outskirts. Under this formula the federal government would provide two-thirds of the excess cost of acquiring and clearing a site for rebuilding and the local government would pay the remaining one-third, which might be contributed in the form of public improvements. The cleared sites would then be sold or leased for rebuilding in accordance with an approved plan.

A division was set up in the Housing and Home Finance agency to handle the program, but the need for extensive planning studies and other preparatory work would delay the start of actual operations.

Without waiting for the federal program to get under way, the city of Pittsburgh, Pa., entered into an arrangement with the Equitable Life Assurance society for the rebuilding of 23 blighted acres in its "golden triangle" with nine office buildings built in a parklike setting, at an estimated cost of $100,000,000.

Although building and construction ended 1949 on a far stronger note than it did the preceding year, forecasts for 1950 were still on the cautious side. The joint estimate of the department of commerce and the department of labour's bureau of labour statistics foresaw another $19,000,000,000 construction year ahead but with private building down $925,000,000 from 1949 and a further increase in public construction to make up the difference. Private home building was expected to slacken, and likewise most other types of private construction. Employment, it was thought, would equal 1949 levels and there would be no substantial change in construction costs. (*See* also ARCHITECTURE; BUSINESS REVIEW; HOUSING; UNITED STATES.)

(H. M. PR.)

Great Britain.—The principal subjects under discussion during 1949 in the building industry of Great Britain were the introduction of schemes of incentive payments and the continuation of the system of licences.

Operatives' output, which was considerably less than the 1939 level, was one of the chief causes of the rising cost of building and it was suggested that it could be raised only by incentive payments. The wage arbitration of 1947 gave half the additional sixpence an hour that had been claimed but included provision for incentive schemes in order to allow the earning of wages above the basic rates. Employers were slow to operate such schemes on an extensive scale in spite of official encouragement from the National Federation of Building Trades Employers and the ministry of works, both of which published booklets giving guidance on their running. Some progress, however, was made in 1949 though there were many kinds of work which did not lend themselves to organization in this way. Trade union leaders complained that far too few men were being given the chance to supplement their wages and that basic wages must be raised if employers were not prepared to operate bonus schemes more widely.

Official control of the licensing of work and of the supply of certain materials was continued throughout 1949 though there had been considerable relaxation of these controls in Nov. 1948. The changes did not affect housing work or the supply of steel or timber, and builders complained that such hand-to-mouth procedures made it impossible to balance future programs of work satisfactorily and thus increased operating costs.

The working party set up by the ministry of works in 1948 to inquire into the operation of the building industry continued to take evidence from a wide variety of sources. A productivity team also visited the United States for six weeks during July and August to study building methods. Although representing a variety of interests the members of the team agreed that production per man-hour in the United States was half as great again as in Great Britain though opinions differed as to the extent to which this was the result of higher wages, better diet, the spur of unemployment, or of there being no shortages to upset planning and cause frustration.

Because of the shortage of steel and timber, reinforced concrete construction was used a great deal for large buildings in place of structural steelwork and new British standards and codes of practice permitted more economy in both techniques. An outstanding result of the steel shortage was the widespread interest in design and construction of prestressed concrete structures. During 1949 both bridges and buildings were completed using this method of construction and small section floor joists were being mass produced to take the place of timber. Hardwood was freed from control in April but supplies of softwood were further threatened by import cuts and devaluation.

(D. A. G. R.)

Bulgaria. A people's republic in the eastern part of the Balkan peninsula, Bulgaria is bounded on the north by Rumania, on the west by Yugoslavia, on the south by Greece and on the east by Turkey and the Black sea. Area (including southern Dobruja): 42,796 sq.mi. Pop. (Dec. 31, 1946, census): 7,022,206, of whom 1,662,255 were urban and the remainder rural; 1948 est.: 7,100,000. Languages (1947 est.): Bulgarian 88%, Turkish, 9.8%. Religions (1947 est.): Greek Orthodox 84%, Moslem 11.5%. Chief towns (pop., 1947 est.): Sofia (cap., 434,888); Plovdiv (125,440); Varna (77,792); Ruuse (53,420). Chairman of the presidium of the national assembly (*sobranjé*): Mincho Neychev; prime ministers in 1949: Georgi Dimitrov and (from July 20) Vasil Kolarov.

History.—There was no significant change during 1949 in the political structure of Bulgaria, which had been politically sovietized already in 1948. In Feb. it was announced that two small parties belonging to the governmental Fatherland (Otechestven) front, Zveno and the Radicals, had decided to dissolve themselves and to merge into the front. Zveno was originally a moderate republican party, based on the middle class and appealing especially to army reserve officers, which had taken part in the 1944 revolution but had lost its most active members by purges in 1946–48. The Radical party, founded at the beginning of the century, was a weak middle-class party. With their disappearance, the Fatherland front consisted only of Communists and rump Agrarians, the latter having in fact no independent influence. But in practice the front had been rigidly controlled by Communists since the summer of 1945.

In July the leader of the Communist party, Georgi Dimitrov, died in the Soviet Union. Having lain in state in Moscow, his corpse was brought back to Sofia, where a state funeral was staged, closely modelled on that of Nicolai Lenin. Like Lenin, Dimitrov's corpse was embalmed and placed on view in Sofia. As in the case of Lenin, Dimitrov's successor as party leader, his brother-in-law, Vulko Chervenkov, made an oration over his body consisting of a series of "commandments" and "oaths," exactly copied from the oration of Josef Stalin over Lenin's body in 1924 and imitating even the litanical style of the former seminarist.

The new prime minister was Vasil Kolarov, like Dimitrov a former secretary of the Comintern. Under him were five deputy prime ministers forming, as in the government of the U.S.S.R., an inner cabinet. The five men chosen were Chervenkov himself, Dobri Terpeshev, Anton Yugov (all three Communists), Gheorgi Traikov (rump Agrarian) and Kimon Gheorgiev (former Zveno). Chervenkov, most of whose political life had been spent in exile in Moscow, was the most powerful man in the country. The new minister of foreign affairs, Vladimir Poptomov, was also a "Muscovite." Yugov and Terpeshev on the other hand had spent their time either in prisons or in underground activity in Bulgaria.

The biggest political event of 1949 in Bulgaria was the "unmasking" of Traicho Kostov, second secretary of the Communist party under Dimitrov. On March 26–27 a special session of the party's central committee decided to remove him from the Politburo. His crime was an "insincere attitude" to the Soviet Union, and "insincerity in self-criticism" after his error had been pointed out to him by his comrades. As one of the chief organizers of the Bulgarian economic plan, he had applied the existing rules about commercial and industrial secrets to soviet citizens as to citizens of other foreign states. By so doing he had proved guilty, in the words of Dimitrov, of "the shameful assumption" that the state interests of the Soviet Union could ever be contrary to those of Bulgaria. Kostov was later expelled from the party itself, was arrested on June 25, and in July his parliamentary immunity was cancelled. On Nov. 29 it was announced that he would be tried for conspiracy, espionage and high treason. The trial opened Dec. 7 and ended Dec. 14, when he was found guilty by the court of all charges placed against him, and was sentenced to death. He was hanged in Sofia on Dec. 16.

"Kostovism" proved a useful label for economic failures. In the five-year plan which began in 1949, Bulgaria was to convert 60% of agricultural output to collective ownership. In practice it seemed that party officials pressed too fast ahead with collectivization. In June a party statement denounced "left-wing sectarianism" in agriculture, and attributed the wrongful use of force against peasants to the influence of the disgraced Kostov. In October the ministers of finance and railways, Petko Kunin and Stefan Tonchev, were dismissed. Throughout the year there were complaints of low productivity and swift changes of employment among the workers.

A new church law was adopted on Feb. 24. Under article 12 of this law, any minister or religious officer who "offends against public order or morality" or "works against the democratic institutions of the state" might be temporarily suspended or dismissed from his office by the ministry of foreign affairs. In this case, the minister of foreign affairs would inform the leaders of the religious community concerned. If they did not take action against the guilty person, he would be "suspended by administrative order." These phrases were capable of wide interpretation by the Bulgarian secret police and Communist party officials, whose views the minister of foreign affairs was certain to carry out.

From Feb. 25 to March 6, 15 Bulgarian Protestant pastors were tried for espionage and subversive activities against the government in the interest of the "western imperialists." It was clear from the proceedings of the trial that their crime was that they had had U.S. or British friends, with whom they had spoken freely and critically of Bulgarian politics. Protestantism had few followers in Bulgaria, but as one of the communities which had long established connections with the Anglo-Saxon world, it was an inevitable target of official repression. (*See* also YUGOSLAVIA.) (H. S-W.)

Education.—(1947-48) Elementary schools 9,238, pupils 889,854, teachers 28,957; secondary schools 258, pupils 152,661, teachers 5,229; technical schools 207, pupils 32,968, teachers 1,051; universities and colleges 9, students 49,800, professors and lecturers 1,283.

Finance and Banking.—(Budget 1949 est.): revenue 151,980,000,000 leva: expenditure 151,980,000,000 leva. National debt (June 1942) 33,708,000,000 leva. Currency circulation (March 1947) 35,000,000,000 leva. Monetary unit: lev (pl. leva) with an exchange rate (Dec. 1949) of $1 U.S.=288 leva.

Foreign Trade.—(1947) Imports 21,420,000,000 leva; exports 24,530,000,000 leva. Main imports: metal and metal products, machinery, textiles, rolling stock and vehicles. Main exports: tobacco, wines and attar.

Transport and Communications.—Roads (1945) 13,870 mi. Licensed motor vehicles (Dec. 1948): cars 4,350, commercial vehicles 4,230. Railways: (1946) 2,072 mi.; passengers carried (1946) 34,000,000; goods traffic (1948) 10,000,000 tons. Telephones (1948) 54,300.

Agriculture.—Main crops (1948, in metric tons) wheat 1,470,000; maize 890,000; barley 250,000; oats 105,000; tobacco 68,000. Livestock: cattle (July 1947) 1,711,000; sheep (Dec. 1947) 9,000,000; pigs (July 1947) 1,028,000; horses (Dec. 1946) 549,000; poultry (Sept. 1947) 10,293,000.

Industry.—Fuel and power: lignite (1947, in metric tons) 4,044,000; electricity (1948) 553,000,000 kw.hr.

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Bunche, Ralph Johnson

(1904–), U.S. political scientist and government official, was born on Aug. 7 in Detroit, Mich. He was graduated from the University of California, Los Angeles, Calif., in 1927 received a master's degree in government at Harvard university in 1928 and a Ph.D. in 1934. He taught political science at Howard university, Washington, D.C., becoming a full professor in 1938. Meantime, he travelled through French West Africa on a Rosenwald field fellowship studying and comparing the administration of French Togoland, a mandated area, and Dahomey, a colony. He was later awarded a postdoctoral fellowship from the Social Science Research council and studied at Northwestern university, Evanston, Ill., and the London School of Economics in 1936 and 1937 before returning to Africa for further studies of colonial policy. During World War II he served variously with the joint chiefs of staff, the Office of Strategic Services and the U.S. state department, principally as technical advisor on the African area. He joined the United Nations secretariat as director of the division of trusteeship in 1946. He was assisting Count Folke Bernadotte of Sweden in mediating the Jewish-Arab warfare in Palestine when Bernadotte was assassinated, and he became acting mediator and supervised the truce and armistice agreements there. In May 1949 he rejected an offer for an appointment as U.S. assistant secretary of state. In August Bunche was relieved of his mission as acting U.N. mediator in Palestine to resume his post as director of the U.N. division of trusteeship.

Burma, Union of.

An independent federal republic lying on the eastern side of the Bay of Bengal, between Pakistan and India on the northwest, Tibet on the north and China, Indo-China and Thailand (Siam) on the east The republic comprises Burma proper, the Shan state, the Kachin state, the Chin special division and the Karen state[1]—this last to include, as well as the hill Karens, the Karens of the plains, who had yet to resolve their internal differences Area: 261,749 sq.mi.; pop. (1948 estimate): 17,000,000 Racially, the peoples of Burma are Mongoloid. About 90% are Buddhist by religion, and about 70% use the Burmese language Chief towns: Rangoon, capital and main port (pop. 1941, 501 291); Mandalay (pop. 1941, 163,537); Moulmein (pop. 1931 65,506); Bassein (pop. 1941, *c.* 50,000); and Akyab (pop. 1931 38,094). President of the republic: Sao Shwe Thaik; prime minister: Thakin Nu.

History.—The year 1949 opened disastrously for Burma Negotiations with the Karens broke down and Karen bands overran more and more areas, even to Insein, at the very gates of Rangoon. The "White Band" section of the People's Volunteer organization (P.Y.A. in Burmese) continued to defy the government, and Communist hostility remained as implacable as ever. Essential goods fell into short supply, and prices rose steeply. Timber, rubber and mineral production was interrupted, with great loss to the national income and the state revenue. The budget for 1948–49, introduced in Sept. 1948 was already falsified by Jan. 1949.

The government, however, still had some degree of control The administration, though damaged, was substantially intact communications, though often cut, were generally open. The 1948 rice crop was successfully garnered.

At this stage, the government made a serious miscalculation

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[1] The Karen state had not been set up by the end of 1949. The old Karenni states, however, were understood to have adhered to the union.

An attempt to disarm the Karens was resisted, and sent the 3rd Karen Rifles at Prome into revolt. On Jan. 31 an attack launched on the Karens at Insein was repulsed, and settled down to a long siege. A rifle attack on the same day against the Karen settlement in west Rangoon caused much damage by fire, and some loss of life. The rift between the two communities was almost complete.

The Karens now took the offensive. By April they controlled the railway area from north of Pegu to Mandalay and Maymyo, and westward to Myingyan on the Irrawaddy. South of Rangoon, they held Thaton, dominated Moulmein and threatened Tavoy and Mergui. Karen and government control alternated in Bassein and some other delta areas, and Karens held the Twante canal.

Other insurgent forces were in the field. White P.Y.A. held Dala (opposite Rangoon), Pegu and some delta towns. Allied in an uneasy democratic front with the Communists, they also controlled most of the riverine districts from Prome to just south of Magwe. They were strong enough to threaten Tavoy in the south. Communists held Pyapon and some other delta towns and had centres in many other areas. Arakan was almost completely out of control.

In fact, the government's writ ran only in Rangoon, a few headquarter towns and in the backward areas comprising the Shan states and the northern districts, where control was at all times of the lightest. Communications were completely disrupted and the administration was thoroughly disorganized. Timber extraction ceased and reconstruction in the Yenangyaung oilfield ended. This point marked the peak of the rebels' success. With the rains in the offing, their men began to melt away to their homes; and by June the government had reoccupied Meiktila, Mandalay, Maymyo, Yenangyaung and Kyaukse in upper Burma, and Moulmein, Thaton, Insein and Twante in lower Burma.

Thus, by the middle of the rains, the government faction was still the strongest in the field, except in Arakan, the Toungoo-Karenni area and parts of the southern Shan states, where the Karens made an incursion and firmly held Taunggyi. The country, however, was exhausted, devastated and terrorized by rival gangs and was in no mood to hold elections or plant wide areas for the next year's export market. The district administration, of fundamental importance in Burma, was broken down, and the treasury was bankrupt.

In the political field, 12 months had seen a great change. On Sept. 14, 1948, enlargement of the cabinet to 21 members was approved, as a bid, doubtless, for wider support. This, however, was not forthcoming, and splinter groups and new parties began to form. The Anti-Fascist People's Freedom league began to disintegrate rapidly, and soon the Socialists were left as the dominant party. In the country, however, they were unpopular and Thakin Nu, as the one man who could steer a middle course, was indispensable to all parties as premier. Early in 1949 he was able to force the resignation of the Socialist ministers; the cabinet was cut down to 12 and most of the seats were filled with non-Socialist supporters of government. The Socialists, however, still controlled the Assembly, and so could cause the government much embarrassment.

These events and the Communist success in China turned the thoughts of Burma increasingly toward the west. India called an informal conference in February at Delhi of Pakistan, Ceylon, Australia and the United Kingdom to suggest mediation in Burma, but this was precipitate and mediation was rejected. Discussions continued, however, between Burma and the British Commonwealth, and with the United States and the international monetary authorities, but led to no definite result.

BUDDHIST TEMPLE at Bassein destroyed in Jan. 1949 during the fighting between Karen nationalists and Burmese government troops. In June, the anti-Communist Karens, most of them Christians, were reported to be trying to set up an autonomous Karen state in central Burma

The widespread disorders further impaired the country's finances, already precarious. The first accounts figures for 1948–49 showed a deficit of Rs. 74,000,000 and even this figure was of doubtful validity. The budget for 1949–50 envisaged a deficit of Rs. 17,000,000 but this was based on an unrealistic revenue figure, and included transfers from the development fund which were not revenue at all. A new factor was the government's revised economic policy. This divided industry into three groups: (1) national industries, (2) private enterprise industries to be nationalized later and (3) industries open to private enterprise without restriction. It was too early to say if this would attract much-needed foreign capital. As, however, there was no provision for paying for industries already nationalized, the outlook in this respect was not hopeful.

(R. M. MacD.)

Education.—(1945–46) schools: state and recognized 2,781, pupils 229,300; private 2,153, pupils 70,180. University (Rangoon, 1948): students 2,742.

Finance and Banking.—Budget: (1947–48 est.) revenue Rs. 674,190,000, expenditure Rs. 723,711,000; (1948–49 est.) Rs. revenue 520,784,000, expenditure Rs. 621,698,000. External debt (Sept. 30, 1949): Rs. 867,000,000. Note issue (Dec. 1948): Rs. 400,000,000. Monetary unit: rupee with an exchange rate Dec. 1949 of 21 cents U.S.

Foreign Trade.—Imports (1948): Rs. 797,000,000; exports (1948): Rs. 593,000,000.

Transport and Communications.—Roads (1949) 12,472 mi. Licensed motor vehicles (Dec. 1948): cars 10,706, commercial vehicles 19,399. Railways (Aug. 1948): 1,786 miles; passenger-miles (1946–47) 205,000,000; net ton freight-mi. 298,000,000.

Agriculture.—Main crops (in metric tons, 1948): rice 5,287,000; peanuts 142,000; cottonseed 14,000; sesame (1947) 43,600: cotton 3,000; tobacco (1945–46) 32,700. Livestock (1948): cattle 5,207,000; sheep 21,000; pigs 402,000; oxen 5,207,000; buffaloes 721,000; horses 12,000; hogs 394,000; goats 172,000. Fisheries: total catch estimated at 500,000 tons annually.

Industry.—(1947): Factories 473; persons employed 46,480. Raw materials (metric tons, 1948): natural rubber (net exports) 9,204; timber, teak round log (target production 1948–49) 230,000; tin concentrate 1,181; lead on smelter basis 7,568; zinc ore 5,586; silver (fine ounces) 450,000.

Buses: *see* AUTOMOBILE INDUSTRY; ELECTRIC TRANSPORTATION; MOTOR TRANSPORTATION.

Business Review.

The year 1949 in the United States was characterized by some downward adjustment from the record business activity and the near-capacity utilization of plants and facilities of 1948. Business developments during the first half of the year reflected a shift from the situation in which a large portion of current production went into inventories to a situation in which part of current demand was met by drawing down inventories. The buyers' strike, chiefly by business men, which struck a whole series of industries in the last quarter of 1948 as prices dropped, spread during the first half of 1949. Business buyers, fearful that prices would drop drastically, reduced orders and scrambled to get rid of inventories. This cautious policy was reflected during the first six months in a substantial drop in industrial production and employment, which in turn contributed to the continued decline in wholesale and retail prices. By mid-1949, production was down by 30% to 50% in some plants. Heavy unemployment appeared in mill towns of New England and the south and in shoe, furniture and metal products centres.

Reduction in spending by business firms and other producers resulted in lower sales and output of heavy equipment. Many producers had completed postwar expansion programs during the early part of 1949 and slowed down on further improvements. Heavy industries in 1949, however, did almost twice the prewar volume of business.

In response to the impact of the deflationary forces and the general business uncertainty which prevailed during the first half of the year, the board of governors of the federal reserve system reduced reserve requirements of member banks twice—early in May and again at the end of June. Also, regulation W, controlling instalment credit, was relaxed in April and terminated at the end of June.

While business buying dropped substantially, the general public continued to buy as prices dropped and as total personal income remained relatively unchanged and at a higher level than in the same period in 1948. On the whole, consumer demand through the first half of 1949 continued high, not far below the peak level of the postwar period. The dollar volume of retail sales during the first three months was greater than in 1948 and was only slightly below 1948 during the second quarter. Steady consumer buying ended the hesitant business buying by early fall. Industrial activity expanded despite coal and steel strikes. Production of soft goods and even of metal products continued to rise. By the middle of the fourth quarter the production upswing was quite general throughout industry, and the business setback of early 1949 had proved to be short and rather mild.

Personal Income and Expenditures.—The changes in U.S. business policy during the year affected industrial production, factory employment and basic commodity prices more than total personal income or the volume of consumer expenditures. Total personal income in 1949 of $211,700,000,000 was only 0.3 of 1% below that of 1948, according to estimates of the U.S. department of commerce; salaries and wages income of $134,900,000,000 was 1.5% greater than in 1948. Thus, the 7.2% drop in manufacturing pay rolls was more than offset by increases in the distribution and service industries and in government payments. According to estimates of the department of commerce, the increase in total nonagricultural income just about offset the drop in agricultural income resulting from the sharp decline (about 12.2% from 1948) in prices of farm products. Personal consumption expenditures during the first half of the year dropped only slightly from the high level of $180,900,000,000 reached in the fourth quarter of 1948, and at the annual rate of around $178,700,000,000 during the first half of the year were slightly greater than during the first half of 1948. Personal consumption expenditures during the third quarter of the year were at an annual rate of $178,500,000,000, only slightly below the same period in 1948. (*See* also INCOME AND PRODUCT, U.S.)

Table I.—*Per Cent Changes in Selected Business Indicators, United States*

Business or Economic Indicator	Per cent change 1949* from: 1939	1944	1948	Per cent change from preceding year: July 1949 from July 1948	Aug. 1949 from Aug. 1948	Sept. 1949 from Sept. 1948	Oct. 1949 from Oct. 1948	Per cent change Oct. 1949 from: Jan. 1949	June 1949	Aug. 1949
General business:										
Business activity[1]	+41.1	−1.5	−8.1	−9.0	−5.1	−2.7	−19.0	−20.5	−14.7	−14.4
Bank debits[2]	+268.7	+38.5	−3.0	−3.6	−7.1	−5.2	−5.1	−5.9	−1.7	+8.3
Commercial failures[3]	−36.8	+654.3	+73.9	+76.3	+72.3	+91.3	+70.0	+41.1	−5.0	−0.6
Personal income:										
Salaries and wages[4]	+26.3	−48.4	+1.5	−0.3	−1.5	−2.1	−3.6	−2.6	−0.6	−1.0
Total[4]	+100.9	−9.3	−0.3	−2.2	−1.9	−2.7	−3.7	−3.4	−1.7	−1.4
Civilian nonagricultural emp.[4]	+40.4	+12.7	−1.4	−4.6	−2.7	−0.6	−0.4	+1.2	+2.8	−0.2
Unemployment[4]	−64.2	+385.7	+61.9	+86.4	+94.7	+78.9	+125.0	+33.3	−5.3	−2.7
Employment and earnings—mfg.[5]:										
Number employed	+45.0	−15.9	−8.5	−13.6	−9.6	−9.6	−11.4	−9.7	+0.9	−1.1
Pay rolls	+236.2	−2.7	−7.2	−13.1	−13.7	−8.8	−11.9	−11.0	−3.6	−0.1
Per production worker:										
Weekly earnings	+130.2	+19.2	+1.4	†	†	+1.0	−0.6	−0.4	+1.3	+1.1
Hourly earnings	+122.2	+37.3	+3.7	†	†	+1.4	0.0	−1.4	−1.4	−0.7
Hours per week	+4.0	−13.3	−2.2	−2.5	−2.5	−0.5	−0.8	+0.5	+2.3	+1.5
Industrial production:[2]										
Durable goods	+83.5	−43.3	−11.1	−15.5	−13.9	−11.6	−24.7	−23.3	−10.3	−9.4
Steel	+66.7	−7.8	−8.7	−22.4	−14.0	−16.4	−54.3	−55.7	−42.9	−43.3
Nondurable goods	+54.1	−1.8	−5.1	−8.9	−6.8	−3.4	−1.7	+0.6	+9.3	+6.7
Total	+60.6	−25.5	−8.9	−13.4	−11.0	−9.4	−14.9	−13.1	−1.8	−2.4
Value construction contracts awarded:[6]										
Residential	+204:4	+1,065.8	+12.6	−2.6	+16.6	+87.9	+68.7	+214.7	+35.1	+27.3
Nonresidential	+282.1	+310.2	+0.6	−11.4	−9.9	+23.3	+12.9	+60.9	+6.3	+28.4
Public works and utilities	+93.1	+223.7	+12.1	+16.0	+12.7	+10.1	+23.2	+100.0	−14.6	−12.9
Total	+186.3	+409.9	+7.8	−2.0	+6.0	+43.5	+36.4	+119.8	+12.3	+17.2
Distribution:[4]										
Department store sales	+169.8	+54.6	−5.3	−11.4	−9.0	−6.5	−11.0	−6.8	−3.5	−2.8
Chain store sales	+184.9	+75.7	−1.8	−5.7	−5.2	−2.7	−1.4	+0.2	+1.9	+2.0
Total retail sales	+205.6	+84.7	−1.2	−3.1	−2.0	−1.2	−2.3	+0.5	−0.2	−0.3
Consumer credit outstanding—total[2]	+103.9	+180.0	−0.4	+10.0	+10.3	+10.3	+10.8	+9.1	+6.6	+4.5
Wholesale prices:										
Other than farm and food[5]	+81.2	+49.5	−2.5	−4.2	−5.4	−5.4	−5.5	−5.2	−0.4	0.0
Prices received by farmers[7]	+165.3	+29.2	−12.2	−17.3	−16.4	−14.1	−12.3	−9.3	−3.6	−0.8
Total[5]	+100.9	+49.1	−6.1	−9.1	−10.0	−9.0	−8.0	−5.2	−1.5	−0.5
Retail prices:										
Food[5]	+112.4	+48.6	−3.8	−7.0	−6.5	−5.1	−5.2	−2.1	−1.8	−1.0
Total cost of living[5]	+70.2	+34.8	−1.2	−3.0	−3.3	−2.8	−2.9	−1.4	−0.6	−0.2
Prices paid by farmers[7]	+96.8	+44.4	−2.0	−2.8	−3.2	−3.2	−3.6	−3.2	−2.0	−1.2
Banking items of member banks:[2]										
Loans	+190.0	+114.2	+0.1	−4.1	−3.4	−4.5	−3.0	−4.6	+2.4	+2.3
Investments in U.S. govt. obligations	+233.2	−11.3	+0.6	+1.8	+4.5	+11.7	+12.6	+11.5	+7.9	+3.1
Total investments	+187.3	−6.0	+1.5	+2.3	+5.4	+11.9	+13.0	+12.4	+8.3	+2.9
Money in circulation	+289.7	+21.8	−2.1	−1.8	−2.1	−2.6	−2.6	−1.0	+0.1	+0.2
Foreign trade (merchandise):[2]										
Exports	+272.8	−16.9	−6.1	−12.1	−10.7	−2.4	−16.8	−22.4	−23.1	−3.6
Imports	+182.3	+67.0	−7.5	−18.3	−18.0	−5.4	−6.8	−5.3	+6.1	+13.8
Corporate profits after taxes[2]	+224.0	+50.0	−23.6	‡	‡	‡	‡	‡	‡	‡

*Data for November and December estimated on the basis of October levels taking into account the seasonal factor where significant.
†Comparable data not available.
‡Corporate profits reported quarterly.
[1] New York Times. [2] Federal Reserve Board. [3] Dun and Bradstreet, Inc. [4] United States Department of Commerce. [5] United States Department of Labor. [6] F. W. Dodge Corporation. [7] United States Department of Agriculture.

Employment.—Although employment dropped in some industries and in some areas at various times during the year, total civilian employment for the first ten months of the year, as estimated by the bureau of labour statistics, averaged 58,600,000 out of a total estimated labour force of 63,500,000—only 1.1% below employment during the same period of 1948. Unemployment for this ten-month period averaged 3,400,000, only slightly above the normal frictional unemployent of around 3,000,000. Civilian nonagricultural employment veraged 50,700,000 for the year, compared with 51,400,000 in 948, a drop of only 1.4%. Manufacturing employment, on the ther hand, was 8.5% below 1948; but increases in employment other sectors of the economy were sufficient almost to offset is drop. (*See* also EMPLOYMENT.)

Production.—U.S. industrial production, as measured by the ederal reserve board index, dropped steadily from 191 in Janu ry to 161 in July. After July, the index rose fairly steadily to n estimated 174 for December. Total industrial production for he year was almost 9% (8.9%) below that for 1948. The de line during the first half of 1949 was fairly widespread, occur ing in both durable- and nondurable-goods industries. The in ex of durable-goods production dropped from 227 in January o 185 in July, a decline 18.5% that of nondurable-goods, from 75 in January to 154 in July, a decline of 12%.

Steel production continued to expand through the first quar er of the year, dropped rapidly from April through July, rose ubstantially in August and September and dropped again to a ow point for the year in October when the steel strike closed nany of the major plants. Total production for the year, how ver, was only 8.7% below 1948, and only 7.8% below the war ime rate in 1944.

Retail Sales.—Consumer demand, as noted above, continued t a high level in 1949. Total retail sales during the first quarter f the year were slightly above the first quarter of 1948, but, vith the exception of May, fell slightly below the corresponding nonth of 1948 after April. Department store sales were off lightly more than chain store sales, dropping in July and Oc ober about 11% below the same months in 1948. The largest lrop in chain store sales (5.7%) occurred also in July, but hereafter the decline from the same month of 1948 was pro ressively less through October, when sales were only 1.4% elow Oct. 1948. For the year 1949, compared with 1948, the lepartment of commerce estimated that total retail sales were lown only 1.2%; department store sales, 5.3%; and chain store ales, 1.8%.

Prices.—The continued decline in prices during the first half f 1949 was more responsible than any other single factor for he changes in business policy with respect to production and nventories. Although price movements varied greatly by com nodity and by market, in the primary markets and on the com nodity exchanges, the general movement was clearly downward. At retail, food prices moved higher during the second quarter, ut prices of apparel, house furnishings and domestic fuels noved steadily lower. Primary market prices weakened further luring the second quarter. Prices of nonferrous metals broke lrastically in May and June. In less than 90 days, zinc prices lropped 47%; lead, 44%; and copper, 33% from their peaks. Prices of scrap steel dropped from $31.50 a ton at the end of March to $19.50 at the end of June. Textile prices declined nore than 3% during the second quarter. As of June 30, the rices of 28 commodities traded on organized exchanges and pot markets averaged 31% below the level of June 1948, and 7% below the wartime peak in 1947.

For the year 1949, wholesale prices of commodities, other han farm and food, dropped 2.5% below 1948. Prices re eived by farmers in 1949 on the average were 12.2% lower than n 1948. Wholesale prices, in general, for the year were 6.1% elow 1948. Retail food prices for the year were down 3.8% rom 1948, and the cost of living, 1.2%.

During the last half of the year, prices stabilized somewhat, vholesale farm prices drifting lower, and prices of commodities ther than farm and food products, remaining substantially un hanged from the July level. (*See* also PRICES.)

New Plant and Equipment.—There was a substantial drop from 1948 in the amount expended by business for the expansion of plants and equipment. This was to be expected, since about $35,500,000,000 had gone into expansion during 1947 and 1948. However, the decrease contributed to the decline in demand for products of the heavy industries and of other suppliers. Nonagricultural business expenditures on plant and equipment in 1949 were estimated at $17,920,000,000, compared with $19,230,000,000 in 1948. Of the 1949 total, about $7,100,000,000 was for manufacturing, $5,080,000,000 for commercial businesses, $3,100,000,000 for electric and gas utilities and $1,360,000,000 for railroads and other transportation facilities.

Construction.—Construction activity in 1949, as measured by the F. W. Dodge Corp., was up 7.8% from 1948, with all types of construction contributing to the increase. Residential, public works and utilities building contracts were each up slightly more than 12% from 1948. Nonresidential contracts were up slightly less than 1%, reflecting the decline in the expansion of industrial and commercial building, although expenditures for such construction were still at a high level.

During the first five months of the year the number of new nonfarm housing starts each month was substantially above the corresponding month in 1947 and only slightly below the same month in 1948, and in June, July and August they were substantially greater in number than in the same months of 1948. There were 98,000 housing starts in August—12% above Aug. 1948, according to reports of the department of labour. (*See* also BUILDING AND CONSTRUCTION INDUSTRY; HOUSING.)

Profits.—Business profits after taxes dropped substantially

DEPARTMENT STORE SALE in Boston, Mass., where 7,500 men's suits and topcoats were sold less than half an hour after the store opened. Numerous markdown sales in clothing during 1949 represented a distinct change from conditions prevailing in the U.S. immediately after World War II

during the first three quarters of 1949 from the high level of 1948, but were still considerably higher than in any previous year except 1947 and 1948. For the first quarter of the year, profits were at an annual rate of $17,300,000,000, according to estimates of the department of commerce, but dropped to an annual rate of $15,100,000,000 in the second quarter, and to $14,700,000,000 in the third quarter. Dividend payments, however, were substantially greater in each of the first three quarters of 1949 than in the corresponding quarters of 1948, reflecting a more liberal dividend policy on the part of business men as the need for reinvestment funds for expansion tapered off. Undistributed profits were reduced about 50%, compared with 1948. Corporate tax liability dropped with the decline in profits, being at an annual rate of about $9,500,000,000 during the second and third quarters of 1949, compared with annual rates of $13,700,000,000 and $14,400,000,000 during the first and second quarters of 1948, respectively, as estimated by the Council of Economic Advisers. For the year 1949, corporate profits after taxes were 23.6% below 1948, according to reports of the federal reserve board.

Banking.—Of importance to the U.S. economy in 1949 was the continued large amount of deposits and currency held by individuals. In January, the amount was $168,200,000,000, only $2,000,000,000 below Jan. 1948. By August, it had dropped to $166,900,000,000—$200,000,000 more than in Aug. 1948, according to reports of the board of governors of the federal reserve system. During the first seven months of the year, currency outside banks remained substantially unchanged at about $25,000,000,000; adjusted demand deposits fluctuated between $81,000,000,000 and $85,000,000,000; and time deposits, between $57,600,000,000 and $58,400,000,000. A major factor underlying the sustained large volume of deposits and currency was the large volume of bank loans outstanding. Loans of all banks as of March 30, 1949, had risen to $48,220,000,000, an increase of $50,000,000 from the amount outstanding on Dec. 31, 1948. There were minor downward fluctuations during the April-August period, but the amount on Sept. 28 was $48,050,000,000. Commercial bank loans reached $42,370,000,000 as of March 30, and stood at $41,780,000,000 on Sept. 28. (*See* also BANKING.)

Exports and Imports.—U.S. merchandise exports, including re-exports and civilian supplies for occupied areas, increased during April and May after a drop in February, but dropped again in July and eased further in August. Imports during the first eight months decreased continuously with the exception of a slight rise in March. For the year 1949, exports were down 6.1% from 1948, and imports, 7.5%. (*See* INTERNATIONAL TRADE.)

Labour Relations.—During the first half of 1949, approximately 2,000 work stoppages resulted from labour-management disputes, a 10% increase in number over the January-June 1948 period. In terms of idleness, however, the estimated total for the first six months of 1949 was only about two-thirds as great as in the comparable periods of the two preceding years, according to reports of the U.S. labour department. Only 13 stoppages during this six-month period involved 10,000 or more workers.

The fourth round of wage increases tended to be smaller than in previous years. A number of important companies rejected union wage demands, and in many industries wages were not subject to negotiation until July and August. However, wage increases of five cents to ten cents an hour were granted in some public utilities and in many manufacturing industries, and the trend toward health and welfare and other "fringe benefits" continued strong.

The labour news was dominated during 1949 by strikes in the steel and coal industries and by agreement on a pension plan for employees of the Ford Motor Co. (*See* LABOUR UNIONS STRIKES.) On the wage front, negotiations during the year resulted in an increase of 1.4% in the weekly earning of production workers, in spite of a drop of 2.2% in hours worke per week. The increase in weekly earning accompanying th reduction in hours was made possible by a 3.7% increase i earnings per hour. (*See* also LAW; UNITED STATES.) (V. B. B.)

"SPLIT IMAGE MIRROR," a cartoon by Bishop which appeared in the S *Louis Star-Times* in 1949

Europe and Commonwealth.—During 1949 business conditions continued to be affected by the deferred effects of war time abnormalities. The two principal disturbing factors wer the trade recession in the United States during the first half o the year and the devaluation of sterling and a number of othe currencies in Sept. 1949.

Industrial production continued to increase in Europe an also in the countries of the British Commonwealth of Nations with the exception of Canada, where it declined during the firs half of 1949 in sympathy with the trend in the United States Among European countries, those which had been affected mos by World War II showed the greatest recoveries. In particula the index of the industrial production of western German showed a gratifying progress toward prewar level.

Table II.—*Wholesale Prices, Various Countries*

(1937=100)

Year and month	Australia	Canada	Czechoslovakia	Denmark	France	India*	Italy	Netherlands	Switzerland	Unite King d
1948										
March	163	174	319	205	1,536	341	5,688	257	211	20
April	163	176	319	208	1,555	349	5,605	257	210	20
May	165	178	320	213	1,653	367	5,545	257	210	20
June	166	180	323	215	1,691	382	5,500	258	210	20
July	169	180	330	217	1,698	390	5,497	257	209	20
August	174	187	331	218	1,783	383	6,103	258	208	20
September	174	187	332	218	1,791	382	6,173	257	207	20
October	174	188	329	218	1,887	382	6,125	262	207	20
November	180	188	331	218	1,977	382	6,064	267	209	20
December	182	189	335	221	1,971	384	6,096	268	208	20
1949										
January	183	188	337	220	1,946	376	6,097	272	207	20
February	185	187	344	219	1,898	372	6,052	272	206	20
March	185	186	340	219	1,872	370	5,946	271	204	20
April	184	186	342	219	1,846	376	5,771	272	201	20
May	185	185	340	219	1,890	377	5,647	271	199	21
June	185	185	338	218	1,812	378	5,580	271	198	21
July	189	185	347	215	1,854	381	5,390	270	198	21
August	189	185	342	214	1,918	389	5,229	269	198	21
September		184	344	216	1,958	390			196	21

*Average Sept. 1938 to Aug. 1939=100.

Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations.

Table III.—*Industrial Production, Various Countries*

(1937=100)

Year and month	Belgium	Canada	Czecho-slovakia	Den-mark	Germany (bi-zone)*	Nether-lands	Nor-way	U.K
1948								
March	93	169	100	120	51	109	128	108
April	94	170	103	131	53	110	129	112
May	94	169	109	127	47	106	138	107
June	88	167	103	137	51	117	133	111
July	86	162	88	97	61	115	79	101
August	92	163	97	135	65	106	122	99
September	97	170	104	141	70	119	130	112
October	97	172	113	142	74	124	128	114
November	96	171	111	143	75	127	134	117
December	97	172	105	124	79	128	124	111
1949								
January	95	165	105	128	81	120	132	112
February	100	167	109	136	80	114	142	118
March	100	172	108	138	90	129	138	118
April	96	171	109	124	82	120	136	113
May	98	174	—	135	88	124	141	121
June		175	112	136	86	123	137	117
July		165	100	106	87	126	89	107
August		165	99	139	91	122	83	108
September				150				

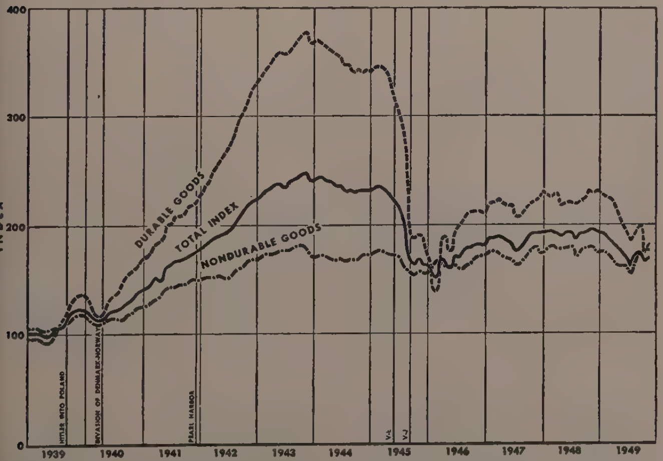
*Base: 1936=100.
Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations.

With the disappearance of the sellers' market in most kinds of consumers' goods, the possibility of difficulties through industrial overproduction was continually being considered by governments and business firms. The difficulty of exchanging the manufacture surpluses of western Europe for the food and raw material surpluses of eastern Europe became more evident as a result of the spectacular recovery of industrial production in western Germany, but fears that a revival of German competition might lead to unemployment or a fall in wages in Great Britain and the industrial countries did not yet materialize.

The setback in business in the United States affected Europe and the British Commonwealth of Nations partly through a decline in U.S. prices of raw materials and manufactures and partly through a decline in U.S. imports. So far from trying to compete with lower U.S. prices, the prices in most European countries continued to increase during the second half of 1948 and showed no material fall during the first three quarters of 1949.

Great Britain and most other western European countries continued to pursue their policies of full employment, and, as a result, the purchasing power of consumers was fully maintained. Business, however, suffered from the disadvantages caused by over-employment.

The devaluation of sterling and many other European and British Commonwealth of Nations currencies toward the end of the third quarter of 1949 constituted an important landmark in the business history of the year and of the postwar period. Anticipation of this step during the preceding months influenced business conditions to no slight extent. There was a decline in the demand for British and sterling area goods, in the hope of being able to buy them cheaper after devaluation. When on Sept. 18 sterling was devalued by 30%, an example followed by the entire sterling area (with the exception of Pakistan) and by many other countries besides, the fear of large-scale deflation was removed.



INDUSTRIAL PRODUCTION of U.S. durable and nondurable goods, 1939-49, adjusted for seasonal variation (1935-39=100) (Source: Board of Governors of the Federal Reserve System)

During 1949 business activity in Great Britain, France, Italy, Australia and other countries was often disturbed by strikes over wages or working conditions. A large proportion of these disputes were believed to have been engineered by Communists for political purposes, by stimulating and exploiting discontent among dock labourers, miners and other workers.

In eastern European countries the process of postwar consolidation continued. The currency reforms carried out in various eastern European countries during the previous two years consolidated monetary conditions, and the nonstop inflation in Hungary and Rumania gave way to a period of comparative stability.

In western Europe the setback in business profits recorded in 1948 continued in 1949, although in many lines the postwar boom continued unabated. There were signs of greater selectivity, because of the disappearance of the virtual certainty that prevailed during earlier postwar years that it was possible to sell at a profit anything produced, regardless of cost or quality. With the increase of competition at home and abroad the industries concerned had to make an effort to cut down superfluous expenditure. The strong political and economic position occupied by labour, especially in Great Britain and France, made this process often difficult, for dismissals for redundancy might be accompanied by strikes.

Mechanization and modernization continued to make progress but were handicapped by lack of exchange to import the necessary equipment or by the need for exporting much of the equipment produced within the countries, in order to obtain the means to pay for essential imports. The increase in output was the result of mechanization rather than of an increased exertion on the part of the manpower employed. In Great Britain and other industrial countries the limited supply of electric power set a limit to further mechanization. India and other agricultural countries made efforts to secure the capital equipment needed for their industrialization.

During the first half of 1949 there was a reduction of government controls but the scarcity of dollars that developed during the summer made it sometimes necessary to arrest and even reverse this tendency. In Great Britain the policy of nationalization continued.

Dominions producing raw materials continued to enjoy prosperity because of the demand for their products. The temporary setback in the prices of their staple exports through the business recession in the United States during the first half of

Table IV.—*Industrial Employment, Various Countries*

(1937=100)

Year and month	Australia	Canada	Czecho-slovakia	Norway	South Africa	United Kingdom*
1948						
March	155	177	99	131	156	109
April	158	177	99	132	154	109
May	158	176	99	133	155	108
June	159	178	99	135	156	100
July	159	181	99	133	156	—
August	159	181	99	134	156	—
September	159	183	100	135	157	101
October	159	184	100	136	159	—
November	160	182	105	137	160	—
December	159	182	105	135	160	101
1949						
January	159	177	104	137	158	101
February	161	177	105	139	162	101
March	162	177	105	139	163	101
April	161	177	105	137	162	102
May	162	178	104	139	163	102
June	159	179	105		163	102
July	144	181			162	102
August		180				102
September						

*Base=1942.
Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations.

Table V.—*Retail Trade, Various Countries*

(1937=100)

Year and month	Australia	Canada	Denmark	Netherlands	Switzerland	U.K.*
1948						
March	232	251	232	279	240	112
April	260	263	239	290	219	110
May	255	283	233	291	236	113
June	240	292	227	270	214	114
July	252	290	217	297	227	114
August	260	276	216	255	183	110
September	270	293	228	270	206	113
October	264	313	245	323	240	118
November	292	299	248	298	243	122
December	276	354	341	319	312	145
1949						
January	252	227	203	276	222	104
February	239	216	203	246	198	112
March	261	266	236	283	207	119
April	293	309	241	322	248	123
May	271	301	244	291	217	128
June	242	312	241	278	216	124
July	239	305		301	224	124
August				253	177	115
September					193	

*Base=1942

Source: *Monthly Bulletin of Statistics*, Statistical Office of the United Nations.

the year became reversed as a result of the devaluation of the pound, which resulted in a sharp recovery in the prices of these raw materials. Disturbances in southeastern Asia handicapped economic activity, though order was largely restored in Malaya, Indonesia and French Indo-China. War fears in Europe were generally less acute than in 1948 and consequently this source of uncertainty was no longer such a strong handicap to business expansion on the continent.

At the end of 1949 business conditions in Europe presented a totally different picture from that of a year earlier. The abnormal postwar buying of consumers' goods to replace those used up or destroyed during World War II came to an end. On the other hand, normal current purchases were running at a sufficiently high level to keep industry fully engaged. During 1949 demand for consumers' goods became increasingly selective. The quality of consumers' goods on sale improved materially, even in western Germany where progress toward normal conditions was particularly striking. (*See* also BANKING; INTERNATIONAL TRADE; STOCKS AND BONDS; WAGES AND HOURS; and articles on individual countries and industries.)

FILMS OF 1949.—*Productivity: Key to Plenty* (Encyclopædia Britannica Films Inc.); *What Is a Contract?; What Is a Corporation?* (Coronet Instructional Films). (P. EG.)

Butter: *see* DAIRY PRODUCTS.

Cabinet Members.

The following members of President Harry S. Truman's cabinet held office on Jan. 1, 1950.

Post	*Name*	*State*
Secretary of State	Dean G. Acheson	Maryland
Secretary of the Treasury	John W. Snyder	Missouri
Attorney General	J. Howard McGrath	Rhode Island
Postmaster General	Jesse M. Donaldson	Illinois
Secretary of the Interior	Oscar L. Chapman	Colorado
Secretary of Agriculture	Charles F. Brannan	Colorado
Secretary of Commerce	Charles Sawyer	Ohio
Secretary of Labor	Maurice J. Tobin	Massachusetts
Secretary of Defense	Louis A. Johnson	West Virginia

Great Britain.—The following is a list of cabinet members of Great Britain, on Jan. 1, 1950.

Post	*Name*
Prime Minister and First Lord of the Treasury	Clement Richard Attlee
Lord President of the Council	Herbert Stanley Morrison
Secretary of State for Foreign Affairs	Ernest Bevin
Chancellor of the Exchequer	Sir Stafford Cripps
Minister of Defence	Albert Victor Alexander
Chancellor of the Duchy of Lancaster	Hugh Dalton
Lord Privy Seal and Paymaster General	Viscount Addison
Lord Chancellor	Viscount Jowitt
Secretary of State for the Home Department	James Chuter Ede
Secretary of State for the Colonies	Arthur Creech Jones
Secretary of State for Commonwealth Relations	Philip John Noel-Baker
Secretary of State for Scotland	Arthur Woodburn
Minister of Labour and National Service	George Alfred Isaacs
Minister of Health	Aneurin Bevan
Minister of Agriculture and Fisheries	Tom Williams
Minister of Education	George Tomlinson
President of the Board of Trade	James Harold Wilson

(*See* also GOVERNMENT DEPARTMENTS AND BUREAUS.)

Cacao: *see* COCOA.

Cadmium: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Calendar of Events, 1949: *see* pages 1–16.

California.

The most southerly Pacific coast state of the United States, California achieved statehood on Sept. 9, 1850. The "Golden state," as it is nicknamed, has a land area of 156,803 sq.mi. and a water area of 1,890 sq.mi. The U.S. bureau of the census population estimate of July 1, 1949, placed the population at 10,665,000, an increase of 54.4% from the 1940 census. The ten chief cities (with 1948 population estimates, and with 1940 populations in parentheses) were: Los Angeles 1,805,687 (1,504,277); San Francisco 807,700 (634,536); Oakland 425,000 (302,163); San Diego 380,000 (203,341); Long Beach 266,806 (164,271); Sacramento (the state capital) 131,000 (105,958); Pasadena 110,000 (81,864); Berkeley 107,000 (85,547); Glendale 100,000 (82,582); Richmond 100,000 (23,642).

History.—A special state election was held Nov. 8, 1949. The electorate of the state voted to reinstate the plan of old age security and of aid to the blind effective prior to 1948, with the exception that the maximum benefit provisions of $75 per month for aged persons and $85 per month for the blind be retained. As a result the extensive powers of the state director of social welfare were curtailed. The new bill also provided for increases and decreases in benefit payments by legislative amendment. At the same time the voters approved the Daylight Saving Time act, providing for the advance of time 1 hr. from the last Sunday of April until the last Sunday of September. The state officers remained: governor, Earl Warren; lieutenant governor, Goodwin J. Knight; secretary of state, Frank M. Jordan; treasurer, Charles G. Johnson; controller, Thomas H. Kuchel; attorney general, Fred N. Howser; superintendent of public instruction, Roy E. Simpson.

Forward steps were taken in the solution of the state's primary problem, water, with the continued progress of the Central Valley project. Work was also commenced on the dredging of a canal in the Sacramento river to provide the state capital with an inland port.

The year 1949 was celebrated throughout the state as the centennial of the California gold rush. Historic documents of general interest were displayed throughout the state.

Education.—Average daily attendance for budgetary purposes for 1947–48 in elementary school districts was calculated at 1,057,071, in high school districts at 383,715 and in junior college districts at 80,245. Enrolment for the fall semester of 1949 in the nine state colleges was reported at 22,631. California again ranked first in the nation in the number of rehabilitations of disabled persons.

Social Insurance and Assistance, Public Welfare and Related Programs.—As of Oct. 1949, the average monthly assistance payment to the 264,67 needy aged of the state was $70.74 (Oct. 1948—193,717 at an average of $61.25). The security for the blind program paid an average of $82.46 monthly to 9,049 persons. The monthly assistance payment average for 71,223 needy children, both in boarding homes and institutions and in families, was $50.72. For the same month unemployment insurance, veterans' allowances and disability insurance paid an average of 195,000 beneficiaries each week a total of $4,380,220.

Total expenditures for the state department of corrections for 1948–49 were estimated at $14,568,791. Inmates of its six adult institutions (as of Oct. 31, 1949) numbered 10,741. The population of its youth authority institutions was 2,247, of which 267 were in its two schools for girls, 280 in its four work camps for boys, 979 in its four schools for boys and the remainder in other institutions.

Communications.—Final automobile registrations for 1948 were 4,175,867. According to the director of public works, there were 13,970 mi. of highway in the state system as of June 1948. State expenditures by the division of highways in 1948–49 were estimated at $52,029,460 for major construction and improvement (1947–48, $47,442,401). There were no federal aid contributions. In 1940 California had 16,856 mi. of railroad, of which 2,768 were electrically operated. In 1948 there were 406 airports, including 111 municipal and 61 military airports. There were 2,356 mi. of federal airways. As of Dec. 31, 1947, there were 3,001,000 telephone stations in the state.

Banking and Finance.—Total assets of the 117 state-supervised banks (with 193 branch offices) as of June 30, 1949, were $3,595,312,000 (1948, $3,616,136,000). At the end of 1948 there were 115 banks (with 873 branches and offices) that were members of the federal reserve system. Total banks debits in 1948 were $88,332,000,000 (1947, $80,966,000,000). The aggregate assets of the 107 state-licensed savings and loan associations (as of Sept. 30, 1949) were $521,641,787.52.

For the fiscal year 1948–49 tax collections in the state amounted to $4,528,799,430 (1947–48, $4,524,914,628), of which $2,955,909,546 were in federal taxes (1947–48, $3,103,679,127).

Estimated total state revenue was $794,393,448 for 1948–49 ($772,718,609 for 1947–48). Estimated total expenditures for the year were $998,030,569 (1947–48, $657,725,532). The estimated budget deficit was $203,637,121, and the net bonded debt of the state (as of Nov. 30, 1948) was $133,563,793.

Agriculture.—Cash farm income in 1948 for California farmers was $2,220,643,000 (2% more than in 1947). Livestock and livestock products returns were 5.7% higher than in 1947, totalling $794,743,000, while crop returns remained almost identical with 1947, totalling $1,412,896,000. Government payments remained almost unchanged at $13,000,000 (1947, $13,004,000). The total acreage of truck crops in California for the year 1948 was 679,020 with production valued at $276,459,000, showing a 9.5% decline in value from the previous year. Field crop acreage was 6,575,200 with a value of $641,777,000 (an increase of 1.7% in value). Fruit and nut crop acreage was 1,621,339, value of production being $401,351,000 (a decline of 5.1%).

Table I.—*Leading Agricultural Products of California*

Crop	1949	1948	Average, 1938–47
Cotton lint, bales	1,300,000	968,000	447,000
All hay, tons	5,771,000	5,718,000	5,518,000
Potatoes, bu.	46,230,000	47,365,000	28,848,000
Oranges, boxes	41,500,000	36,910,000	48,894,000
Lemons, boxes	12,000,000	9,930,000	13,164,000
Barley, bu.	47,038,000	49,471,000	37,336,000
Wheat, bu.	11,470,000	10,535,000	11,429,000
Beans, dry, bags (100 lb.)	4,696,000	4,960,000	4,162,000
Peaches, bu.	34,461,000	30,127,000	28,273,000
Rice, bu.	21,462,000	15,183,000	12,667,000
Pears, bu.	16,293,000	10,668,000	11,530,000
Apples, bu.	9,520,000	5,870,000	7,959,000
Grapes, tons	2,526,000	2,857,000	2,547,600
Apricots, tons	164,000	219,000	202,100

Manufacturing.—Employment and production of California manufacturing industries rose to new high peacetime levels in 1948. Retail sales increased to $11,672,038,000 (1947, $10,672,038,000). The volume of wholesale trade in California was estimated at $12,335,313,000 during 1948. New construction within the state amounted to $2,450,000,000 during 1948 according to U.S. department of commerce estimates, marking an increase of 33.6% over 1947. The fish pack by canners for 1947 was valued at $132,721,000.

Table II.—*Annual Average Employment and Wages in California Manufacturing Industries*

Industry	1948 No. employed	1948 Wages (000's omitted)	1947 No. employed	1947 Wages (000's omitted)
Food and kindred products	91,700	$235,700	89,400	$224,100
Transportation equipment	69,400	201,700	76,900	214,800
Iron, steel and products	51,600	155,700	50,200	139,600
Apparel	36,200	84,300	32,400	72,100
Machinery (except elect.)	34,000	104,600	36,100	103,400
Lumber and timber	29,700	105,800	24,800	81,000
Stone, clay and glass products	28,900	82,000	26,800	72,800
Printing and publishing	21,300	73,800	20,000	61,900
Furniture and finished lumber	19,800	49,700	20,800	49,800
Chemicals and allied products	17,100	50,100	17,500	47,800
Automobiles and equipment	14,400	43,400	12,800	35,400
Petroleum products	14,300	48,800	15,300	48,200

During 1948 an average of 730,600 wage and salary earners were employed in California industry. Total wage and salary pay rolls of manufacturing industries were approximately $2,498,300,000 (1947, $2,348,200,000).

Mineral Production.—Mineral production in California in 1948 reached a total value of $1,199,703,000.

Table III.—*Value of Principal Minerals Produced in California*

Product	Value 1948	Value 1947
Petroleum	$792,521,000	$564,531,000
Natural gas	74,000,000	45,143,000
Cement	49,670,000	...
Natural gas—gasoline	47,000,000	...
Miscellaneous stone	38,500,000	...
Salines	29,000,000	22,500,000

FILMS OF 1949.—*Life in the Central Valley of California* (Coronet Instructional Films). (D. C. CR.)

Cambodia: *see* FRENCH UNION.

Cameroons: *see* BRITISH WEST AFRICA; FRENCH UNION; TRUST TERRITORIES.

Camp Fire Girls.

In 1949 the more than 360,000 Camp Fire Girls in the United States chose the slogan "Make Mine Democracy!" as a national project to celebrate their organization's 39th anniversary. All members from the youngest to the most grown-up were to make it their task to see, do and tell democracy in different ways during the entire year. In putting this program into effect, they observed democracy in action by visiting local courts, city councils, state legislatures, newspaper plants and other media through which democracy functions; they practised democracy at home by taking part in community activities, by visiting shut-ins and by baby-sitting for busy parents; they practised democracy abroad by sending collections of clothing, food and toys to needy children; they told of democracy in letters to "pen pals" overseas.

For the second successive year, Camp Fire Girls "Sent Santa Overseas" by means of thousands of red Christmas stockings, packed with toys, school supplies, candies, gum and many other things for children in other lands. Earlier in the year they had packed party kits for distribution to children abroad.

Membership in the Camp Fire Girls, Inc., which was founded in 1910, is open to all girls between the ages of 7 and 18. There are three groups: Blue Birds, 7 to 10 years old; Camp Fire Girls, 10 to 15 years old, and Horizon club members, who are senior high school students. Enjoyable and worthwhile leisure-time activities, to develop their best potentialities as alert citizens and homemakers or professional women, are suggested by the Camp Fire's seven crafts: home, outdoors, creative arts, frontiers (science), business, sports and games, and citizenship. The Camp Fire Law bids them to "Worship God, Seek Beauty, Give Service, Pursue Knowledge, Be Trustworthy, Hold on to Health, Glorify Work, Be Happy."

Publications of 1949 included *Frontiers—Fun with Science for Camp Fire Girls* and *Our Land—Conservation Activities for Camp Fire Girls. The Camp Fire Girl* is the official magazine published monthly from September through June.

In 1949 there were 270 Camp Fire Girls councils in the United States. Groups also met in the Philippines, El Salvador, Austria, Alaska, Great Britain and Germany.

Adult volunteer and professional leaders met in Portland, Ore., during Oct. 1949 for the organization's triennial national conference, the theme of which was "Youth—Outpost of Democracy." Camp Fire Girls took part in demonstration and discussion groups, and in a grand pageant depicting the founding and development of Camp Fire.

National officers in 1949 were Mrs. James C. Parker, president; Earle W. Brailey, chairman of the board; Mrs. Richard W. Blalock, vice-president; Clifton J. Finch, treasurer; Mrs. Frank C. Love, secretary, and Miss Martha F. Allen, national director. National headquarters: 16 East 48th St., New York, N.Y. (LE. C.)

Canada, Dominion of.

A member of the British Commonwealth of Nations, Canada is a federal union under the terms of the British North America act (1867). Provinces: Nova Scotia, New Brunswick, Quebec, Ontario, Manitoba, British Columbia, Prince Edward Island, Alberta, Saskatchewan and Newfoundland. Outside the provincial boundaries are the Yukon and the Northwest Territories, under federal jurisdiction.

Area, 3,847,597 sq.mi. Capital: Ottawa (*q.v.*). Largest city:

Montreal, pop. (Feb. 1948 est.) 1,096,060. Governor-general: Viscount Alexander of Tunis.

The population was estimated by the dominion bureau of statistics at 13,636,000 in Sept. 1949, compared with 11,506,655 in 1941.

History.—Immigration during 1949 was estimated at 125,000, but toward the end of year the flow dropped sharply and the federal government considered some sort of subsidy for British migrants who were barred from taking more than $770 per year out of Great Britain. By the end of Oct. 1949 Canada had accepted a total of 73,982 displaced persons and was considering ways and means of admitting another 26,000 to reach the desired 100,000 ceiling.

Politics.—In the June 27, 1949, federal election the Liberals were returned to power with the biggest majority of any Canadian party in history. Seats and popular votes won by parties (with number of seats held at dissolution, and number of votes won in the 1945 general election, in parentheses) were: Liberals 193 (125) seats, 2,926,029 (2,170,625) votes; Progressive-Conservatives 42 (69) seats, 1,742,235 (1,455,453) votes; Co-operative Commonwealth federation (socialist) 12 (32) seats, 790,321 (822,661) votes; Social Credit 10 (12) seats, 139,801 (214,998) votes; others 5 (7) seats, 257,921 (582,393) votes. In 1949 there were 7,893,425 voters, 900,000 more than in 1945.

Government and Constitution.—The government called the 5th session of the 20th parliament in January and dissolved it in April for the general election, and then called the 1st session of the 21st parliament in September and prorogued it in December. A $10,000,000 program was authorized to assist coal mining in the maritime provinces; the federal departments of mines and resources, and of reconstruction, were reorganized into the departments of mines and technical surveys, and of resources and development; a new department of citizenship and immigration was created.

There were several constitutional developments during the year. The government won approval in both the Canadian and British parliaments for its British North America act no. 2, in which the Canadian parliament was given power to amend the constitution in matters lying solely within federal jurisdiction. In addition, appeals to the British privy council were abolished, and the supreme court of Canada was enlarged and made the nation's highest tribunal. The word "dominion" was dropped from governmental terminology in an effort to emphasize independent nationhood. The national flag issue was revived in the commons, without decision.

Dominion-Provincial Relations.—The biggest dominion-provincial event of 1949 was the formal entry of Newfoundland (*q.v.*) on March 31 into the union as the tenth province. Early in Nov. 1949 Prime Minister Louis St. Laurent (*q.v.*) announced a Jan. 10, 1950, federal-provincial conference to deal entirely with constitutional matters, the first of its kind since 1935. The agenda included subjects wholly within provincial jurisdiction, and those of joint federal-provincial authority.

Defense.—Canada signed the North Atlantic treaty and was the first signatory to ratify the pact. Parliament passed legislation to unify the national defense department and agreed to boost defense estimates from $349,384,800 for 1948–49 to $586,315,300 for 1949–50; the government announced speed-up of recruiting in all three services. U.S. and Canadian forces co-operated in air, naval and amphibious manoeuvres during the year, and exchanged scientists during arctic researches. The Canadian army held a number of exercises by itself, including its biggest peacetime air-ground manoeuvre, along the Alaska highway. The royal Canadian air force formed a second fighter squadron and an operational training unit, the latter to do coastal reconnaissance; began a $2,500,000 building program to bring stations up to operational requirements; and created a coast-to-coast organization of 500 volunteer radio vigilantes for

CANADIAN ARTILLERYMEN firing a 19-gun salute outside the parliamentary buildings at Ottawa, Ont., to mark the entry of Newfoundland as the tenth Canadian province on March 31, 1949 use in case of national emergency. The Canadian navy reopened the wartime naval training base near Halifax, cut the recruiting age to 17 years and took "Canadianization" steps after a royal commission investigated naval conditions and found the navy too British in attitude.

Economic Controls.—Although in March parliament extended the continuation of the Transitional Measures act of 1947 to 1950, its application was limited to domestic rentals, certain food prices, building priorities, lumber and steel. In March the government lifted price ceilings on butter, bread, sugar and flour; and before the year's end the prices board lifted controls on fruits and vegetables; the timber control lifted export restrictions on softwoods and millwork and hardwood flooring; and the department of finance authorized rent increases up to 22% effective Feb. 1, 1950. Steel, foreign exchange and most of the import controls created in 1948 were maintained.

Finance.—National revenues for the period March 31 to November 1, 1949, were $1,442,300,000 and expenditures were $1,137,000,000, compared with $1,530,000,000 and $996,000,000, respectively, for the same period of 1948. The 1948–49 fiscal year ended with a $575,000,000 surplus, and at March 31, 1949, Canada's U.S. dollar holdings totalled $1,065,000,000. At Sept. 30, 1949, Canada's net debt was $11,495,881,920, compared with $17,100,000,000 in Sept. 1946. The dominion bureau of statistics reported in May 1949 that in 1948 $2,700,000,000 of U.S. capital moved into Canada, $156,000,000 more than in 1947 and $252,000,000 more than in 1946.

Taxation.—The 1949 budget gave considerable tax relief. Income tax exemptions were raised to $1,000 for single and $2,000 for married persons (which took about 750,000 persons off the tax rolls), and rates were lowered (giving an average cut of 15% in tax). Excise taxes were repealed on soft drinks, candy, chewing gum, long distance telephone calls and telegrams and transportation tickets, and other excise taxes were lowered. Corporation taxes were cut from 30% to 10% on the first $10,000, but the rate above $10,000 was increased from 30% to 33%. The tax reductions for 1949–50 meant about $369,000,000 savings to the taxpayers. Corporation and individual income tax collections for the fiscal year ending March 31, 1949, totalled $1,297,999,404, compared with the wartime peak in 1944 of $1,151,757,035.

Economic Conditions.—The biggest economic event of the year was the devaluation move in which the Canadian dollar dropped to a value of 91 cents in U.S. currency. This raised the price of all U.S. imports into Canada, but at the same time raised the dollar-value of all Canadian exports to the U.S. The cost-of-living index hit an all-time high in Aug. 1949 of 162.8, having risen from 159.6 in January, but by November declined to 161.7. Business continued at a high level: retail sales in Sept. 1949 totalled $685,000,000, or about 7% above Sept. 1948; department store sales for the first half of 1949 were $382,744,000, up $34,000,000 over the same 1948 period. The royal commission on prices, called in 1948, submitted a 400,000-word report in April 1949, and recommended government brakes when inflation threatened and government stimulus when slumps impended. By the end of the year some regional economic soft spots appeared and the federal government took steps to provide regional public works aid.

Employment.—In Feb. 1949, there were 212,000 men and 53,000 women registered for work at the government employment service. The total was 64,000 more than the highest 1948 unemployment peak. Despite the fact that at the end of Aug. 1949 approximately 5,155,000 Canadians were employed, compared with 5,042,000 in Aug. 1948, the number of jobs in relation to the employable population decreased, and in mid-December there were 261,000 unemployed, or 5.2% of the total labour force. The total labour pay-roll for the January–August period was $5,002,000,000, a gain of 9% over 1948. Personal incomes for Canadians in 1948 totalled $11,900,000,000.

LOUIS ST. LAURENT, Canadian prime minister and Liberal party leader, addressing well-wishers on parliamentary election night, June 27, 1949. Final returns gave his party a wide majority in the house of commons

Industry.—Production continued, on the whole, at record levels. Latest 1949 monthly statistics (with 1948 monthly average in parentheses): refined petroleum products, July, 8,763,000 (6,747,000) bbl.; refined copper, September, 36,300,000 (36,900,000) lb.; nickel, September, 19,100,000 (22,000,000) lb.; refined lead, September, 29,100,000 (26,700,000) lb.; iron ore, September, 460,700,000 (108,700,000) tons; synthetic rubber, September, 8,150,000 (7,550,000) lb.; boots and shoes, September, 3,377,000 (2,701,000) pairs; newsprint, October, 433,000 (382,600) tons; automobiles, October, 28,130 (21,980); refrigerators, September, 16,730 (11,570); radios, September, 45,900 (51,000). There was a flurry when the federal combines commissioner issued reports of monopoly practices in the flour milling, flat glass and match industries. The government plugged visible loopholes in the combines act by parliamentary amendments.

Co-operatives.—The Canadian Co-operative congress celebrated its 40th birthday in 1949. For the first time membership reached the 1,000,000 mark. A total of 2,249 co-operatives of all kinds did $780,084,955 worth of business in the 1947–48 fiscal year. Prior to 1948 marketing co-operatives were predominant, but thereafter purchasing co-operatives were organized more frequently than marketing ones. Credit unions—co-operative savings and lending institutions—continued to expand. Figures for 1948 (with 1939 in parentheses) were: 2,608 (844) unions with 850,608 (151,554) members and assets over $250,000,000 ($20,000,000).

Natural Resources.—Eastern and northern Ontario and western Quebec were surveyed by low-flying aeroplanes carrying magnetometers in an effort to locate additional bodies of iron ore and nickel. Steep Rock iron ore production was increased to where it would almost meet Canada's domestic needs. The federal government extended its 1948 aid to gold mines to promote production. Mineral discoveries included lead at Coronation gulf, manganese in Labrador, tin and asbestos in Ontario and uranium-bearing ore at Marion Lake, N.W.Terr., Goldfields, Sask., and Thunder Bay, Ont. The Hudson's Bay company held its first fur auction sale in Canada. Production of 7,952,146 raw fur pelts in the 12 months ending June 30, 1948, was valued at $32,233,000, an increase of $5,883,000 over the preceding year.

Agriculture.—Despite reverses in the British market, 1949 was busy and profitable for Canadian farmers. Preliminary statistics revealed that cash income from sale of farm products amounted to $1,056,500,000 for the first six months of 1949, a 14.7% increase over the similar 1948 period. Wheat production was estimated at 342,000,000 bu., compared with 363,000,000 bu. for 1948; coarse grain production at 320,000,000 bu., compared with 388,000,000 bu. Cattle marketings increased while marketings for other kinds of livestock declined sharply during the first five months of 1949, compared with the same 1948 period, but prices in all lines were higher. In Dec. 1949 the British government announced no 1950 food contracts for eggs, beef, poultry and apples, and the domestic market took a quick decline for most of those products. The federal government set a price floor of 32½ cents a pound for bacon, and during the year continued price supports for potatoes, butter, skim milk and honey. Canada signed the 1949 international wheat agreement, and agreed to supply 200,000,000 bu. annually to the wheat-importing signatories. On Aug. 1, 1949, the Canadian wheat board increased the price of wheat to farmers from $1.55 to $1.75 per bushel and took over marketing of coarse grains. The Federal Prairie Farm Assistance act allotted $17,000,000 in assistance payments to 70,000 drought-stricken farmers in Saskatchewan and Alberta. Early in 1949 the supreme court of Canada ruled that the manufacture and sale of oleomargarine were legal in Canada, and production and distribution began at once. A rash of anti-margarine laws broke out in the provinces.

Trade.—Canada's export trade ran to $2,181,000,000 for the first nine months of 1949, against $2,212,000,000 for the same 1948 period. The drop accelerated somewhat during the final three months of the year because of the British trade crisis, but the year-end total was not far from the 1948 export total of about $3,000,000,000. By August European countries had spent $785,000,000 of their Marshall aid grants in Canada, which meant that Canada was supplying about 13% of all Economic Cooperation administration goods. Despite the import walls which restricted Canadian trade with the United States, more than $1,312,600,000 worth of U.S. goods crossed the line in the first eight months of 1949. Canada reduced its export controls to 137 items from a 1944 peak of 1,109 items. The government announced it had set up machinery for Canadian exporters, upon application, to engage in barter deals. Under the Annecy agreements Canadian exports received new tariff concessions in ten countries in return for similar Canadian concessions for the goods of those countries.

Transportation.—Trans-Canada Air Lines reported a combined deficit of $2,932,240 on its North American and overseas services during 1948. Expanding its services, T.C.A. was granted the right to pick up trans-Atlantic passengers at Iceland, Ireland and the Azores. Canadian Pacific Air Lines gained full traffic rights at Hong Kong and Fiji Islands, and thus inaugurated a regular two-flights-per-month service between Vancouver and Sydney, Austr. The operation of the Australian service added about 8,400 mi. to C.P.A.'s 9,000-mi. network in northern Canada.

The board of transport commissioners, which in 1948 boosted railway freight rates by 21%, announced in Sept. 1949 a further 8% interim increase. The Canadian Pacific Railway, wanting a further 12% increase, appealed to the supreme court of Canada which late in December ruled that the commissioners review the 8% decision. During 1949 the C.P.R. undertook a $310,000,000 program to improve service. New railroad construction was started in the Romaine valley, Que., to tap titanium ore bodies, from the north shore of the St. Lawrence river to the Quebec-Labrador iron ore beds, and from Quesnel to Prince George, B.C.

The biggest 1949 highway development was the Trans-Canada Highway Assistance bill passed by parliament in Dec. 1949. In a right-about-face from previous stands, the federal government offered to pay half the $300,000,000 estimated needed to hard-surface approximately 5,000 mi. of road between St. John's, Nfd. to Victoria, B.C. (with a diversion to Prince Edward Island).

The Canadian maritime commission blamed the summer-long, Communist-inspired Canadian Seamen's union strike disturbance, which cut into shipping, for the near-bankruptcy of Canadian shipping. Another cause was the lower-cost operation of competing foreign shipping which forced freight rates below Canadian profit levels. To offset the latter, the Canadian government granted a $3,000,000 subsidy to deep-sea vessels of Canadian registry, transferred up to 130 Canadian vessels to British registry where they could continue to earn dollars but could be recalled in an emergency, and passed an act to encourage through tax reduction the construction and conversion of vessels in Canada. To further encourage shipbuilding, the government announced contracts totalling $9,000,000 for new warships.

(*See* also articles on individual Canadian provinces and territories; *see* also Accidents; Canals and Inland Waterways; Chambers of Commerce; Consumer Credit; Education; Electrical Industries; Electric Transportation; Fisheries; Forests; Horse Racing; Housing; Industrial Health; Labour Unions; Literary Prizes; Municipal Government; Newspapers and Magazines; Post Office; Public Utilities; Rivers and Harbours; Rural Electrification; Social Security; Strikes; Theatre; Veterans' Organizations; Wildlife Conservation.) (C. Cy.)

Canadian Literature.

Fiction.—Contemporaneous themes predominated in the 1949 crop of Canadian novels. Constance Beresford-Howe's *The Invisible Gate* portrayed family life in Montreal; Isabelle Hughes' *Time in Ambush* did the same for Toronto. Len Peterson's *Chipmunk,* a study of maladjustment, and Sol Allen's *Toronto Doctor* also used Toronto settings. Leo P. Walsh discussed current Canadian attitudes toward illegitimacy in *The Sinful Town.* In *Perilous Passage* Arthur Mayse described the thrills of smuggling off Canada's west coast. Jessie McEwen's *Taltrees* portrayed the modern era of an Ontario timber baron's heritage. World War II echoed in two 1949 novels: Earle Birney sharply satirized the Canadian army in *Turvey* and Hugh Garner painstakingly probed navy discipline in *Below Decks.* Three new novelists chose non-Canadian themes and scenes: Robert Christie, *Inherit the Night,* tragedy in the Andes; Susan Alice Kerby (pseudonym Elizabeth Burton), *Mr. Kronion,* comedy in an English village; David Walker, *The Storm and the Silence,* adventure in the Scottish Highlands.

The other 1949 English-Canadian novels went into the past for their themes and settings. Ethel Wilson's chief character in

Innocent Traveller spanned 100 years, from Victorian England to modern Vancouver; Kathleen Coburn's *The Grandmothers* covered nearly the same period, with one lively grandmother in Ontario and the other in Czechoslovakia; Mazo de la Roche's sentimental *Mary Wakefield* filled in the '90s in her famous Jalna saga. Even more remote history appealed to other authors: Will R. Bird went to Nova Scotia in 1755 for his robust *Passionate Pilgrim;* Harry Symons to the voyage of Columbus for his realistic *Three Ships West;* Bertram Brooker to Jerusalem for his vigorous portrait of Barrabbas, *The Robber.*

Nonfiction.—Biography continued to draw writers: *Tom Cullen of Baltimore,* Judith Robinson; *Brûlé, Immortal Scoundrel,* J. H. Cranston; *Link to the North* (Mickey Ryan of arctic fame), G. J. Tranter; *Mackenzie King of Canada,* H. Reginald Hardy. Personal memoirs prompted three: Nancy Jones, preacher's wife, reported her life in *For Goodness' Sake;* W. T. Allison recalled a professor's life in *This for Rembrance;* Ruth Harvey reminisced about the old-time theatre in *Curtain Time.*

The rest of the 1949 nonfiction was extremely varied. A number of personal commentaries were compelling: Robertson Davies was by turns witty and caustic with *The Table Talk of Samuel Marchbanks;* Hugh MacLennan searchingly examined the Canadian personality in *Cross Country;* Arthur Meighen restated his political and other speeches *Unrevised and Unrepented;* radio was the springboard for *John Fisher Reports* and *Andy Clark and His Neighborly News,* the material in both having been previously broadcast as 15-min. talks.

Poetry and Plays.—Few poets reached print; included were Doris Hedges' *Words on a Page,* John Murray Gibbon's *Canadian Cadences,* Hyman Edelstein's *Last Mathematician,* T. B. Windross' *Gates of Glory,* Marjorie Freeman Campbell's *High on a Hill* and Thomas Saunders' *Scrub Oak.* Playwright Robertson Davies presented a tragedy, *Fortune, My Foe,* and a comedy, *Eros at Breakfast.*

French-Canadian.—Critics hailed Ringuet's (pseudonym of Phillips Panneton) *Le poids du jour* as his best novel and the leading book of 1949. It covered 50 yr. of small-town and Montreal city life before and after World War I with lively fidelity. Jean Simard's *Hôtel de la reine* was a psychological story with divertingly humorous overtones. Germaine Guèvremont's *Marie-Didace* was a poetic treatment of typical French-Canadian rural life. Claude Véla portrayed family conflicts solved by faith in *Dérive* and Claude Surlands went to an old chateau in the Carpathian mountains for love and adventure in *La campanule des Karpathes.* Other outstanding novels of the year included: André Giroux's *Au delà des visages* and G. Moberley's *Diana.*

Most significant works of nonfiction were Robert Rumilly's *L'autonomie provinciale,* a well-documented study of provincial rights and autonomy, and Dostaler O'Leary's *Introduction à l'histoire de l'Amérique latine,* a monumental treatment of South American history. (*See* also Literary Prizes.)

Films of 1949.—*The Loon's Necklace* (Encyclopædia Britannica Films Inc.). (C. Cy.)

Canals and Inland Waterways.

Of the estimated 65,000 mi. of potential inland waterways in the United States, approximately 30,000 mi. had been improved for navigation by commercial and pleasure craft by the end of 1949. All operations and maintenance of the system, which included 185 harbours and 400 locks, re-

OFFICIAL OPENING of the partially completed Friant-Kern canal, July 9, 1949. Eventually the canal was to irrigate about 600,000 acres of arid land in the central valley region of southern California mained the responsibility of the corps of engineers, department of the army, under the direction of the congress.

Principal components of the over-all, interrelated system of rivers, lakes, bays and canals include the Great Lakes, the Mississippi river system, the Illinois waterway, the New York state canal system, the Cape Cod canal, the Chesapeake and Delaware canal, the Atlantic Intra-Coastal waterway, the Gulf Intra-Coastal waterway, the Sacramento river system and the Columbia river system.

The River and Harbor act approved by the 81st congress, Oct. 13, 1949, public law 355, provided $1,114,145,690 for the construction of 92 authorized projects in 37 states, including about $995,000,000 for flood control and about $119,000,000 for river and harbour projects. An additional $75,000,000 was appropriated for maintenance, operation and care of the nation's vast network of ports and inland waterways, and $3,200,000 for planning, preliminary examinations and surveys of new projects. In addition, the lower Mississippi river and the Sacramento river in California received separate appropriations of $67,000,000 and $3,600,000 respectively for construction, maintenance and operations.

Among the principal projects on which construction was begun or continued during the year were the McNary lock and dam and the Chief Joseph dam on the Columbia river in the interest of navigation, power development and irrigation; the New York and New Jersey channels; Demopolis lock and dam on the Warrior river, Ala.; Houston ship channel, Tex.; the Neches and Angelina rivers and the Sabine-Neches waterway, in Texas; lateral canal and lock project on the Mississippi river at Chain of Rocks, near St. Louis, Mo.; Morgantown dam and lock No. 2 on the Monongahela river; Cleveland harbour; the Missouri river between its mouth and Sioux City, Ia.; Pearl River, Miss. and La.; San Diego river and Mission bay, Calif.; New Haven harbour, Conn.; Jim Woodruff lock and dam, Apalachicola river, Fla. (*See* also FLOODS AND FLOOD CONTROL; RIVERS AND HARBOURS.)

According to preliminary estimates, the total net water-borne commerce of the United States, eliminating all known duplications of traffic between rivers and ports, reached the record high of 794,772,987 short tons in the calendar year 1948. Ocean traffic, foreign and coastwise, aggregated 335,253,737 tons.

Also according to preliminary estimates, United States water-borne commerce on the Great Lakes aggregated 118,000,000,000 ton-miles in 1948. This exceeded the previous all-time high of 113,639,000,000 ton-miles in 1941, and compared with 112,165,321,000 ton-miles in 1947.

Inland waterway commerce, excluding the Great Lakes, totalled 40,276,403,000 ton-miles, including the deep sea traffic on the Mississippi river below Baton Rouge, La. Of this total, the Mississippi river system accounted for 27,859,246,000 ton-miles, while the Gulf Intracoastal waterway proved to be the second most important segment, with 5,903,341,811 ton-miles.

Preliminary figures indicated that the following ten were the leading U.S. ocean ports in 1948: New York, N.Y., 135,373,128 net tons; Baltimore, Md., 41,468,955; Philadelphia, Pa., 34,966,083; Houston, Tex., 34,323,833; New Orleans, La., 29,889,400; Norfolk, Va., 27,073,681; Beaumont, Tex., 23,919,540; Port Arthur, Tex., 23,392,655; Boston, Mass., 18,502,902; Newport News, Va., 17,465,180.

FILMS OF 1949.—*Mississippi River—Lower River; Mississippi River —Upper River* (Academy Films); *Inside Passage; Valley of the Giants; Deep Waters* (U.S. Army). (G. HB.)

Canada.—At the 1949 sessions, parliament voted $8,150,000 for the maintenance of locks and dams and $3,891,000 for the operation and maintenance of canals. In addition, it voted $3,827,000 for construction and improvement to canals. There was some talk during 1949 of constructing a canal through the Chignecto isthmus to join the Bay of Fundy with the Strait of Northumberland, so as to shorten the haul of Labrador iron ore to New England markets, but no specific action was taken.

Canal traffic during the year was at record figures. Tonnages for the April-Oct. 1949 period (with similar 1948 tonnages in parentheses) were as follows: Sault Ste. Marie (Canadian-U.S.) 91,420,487 (102,456,000); Sault Ste. Marie (Canadian only) 1,979,080 (1,845,270); Welland 11,699,335 (11,541,000); St. Lawrence 6,993,058 (6,534,000). The Rideau canal, running between Ottawa, Ont., and Kingston, Ont., and used chiefly by pleasure cruisers, had 20,461 lockages in 1949, compared with 16,382 in 1946. (C. CY.)

Great Britain.—During 1949 the Transport commission published its first report and accounts covering the year 1948. Results were better than anticipated; but operations of the Docks and Inland Waterways executive showed deficits for canal tolls and carrying receipts, although the total traffic was higher than in 1947. Acquisition of the remaining railway-owned canals was continued. Improvements, including the modernization of carrying craft, were carried out. Dredging plant was transferred to deepen canals at shallow points and banks and towpaths were restored to enable full loads to be carried. The pooling of resources speeded up the turn-round of craft.

The commission owned or controlled 1,149 carrying craft (about one-sixth of the total operating on British canals) and 2,050 mi. of waterways, 1,000 mi. of which were broad gauge canals and canalized rivers. Through tolls were introduced, but only for each waterway division. Negotiation machinery was reviewed with trades unions and the constitution of the Joint Industrial council was revised.

The Port of London authority, concerned at rising dredging costs, set up a pilot model of the Thames estuary. The model was to be used experimentally to discover conditions likely to arise in a larger model to be built later embodying the knowledge gained. The larger model, it was hoped, would yield reliable data for practical application.

Belgium.—Plans were drawn up to enable large Rhine-going lighters to proceed in the northern and eastern districts above Ghent, near Antwerp, and in the Brussels district to Clabecq and Liége, financed by the European Recovery program. Mons, Charleroi, Tournai and La Louvière could only take craft up to 300 tons.

Danube.—The first meeting of the International Danube commission, which was set up at the conference in Belgrade, Aug. 1948, was held in Galați, Rumania, in Nov. 1949. F. Rudenćo, Rumania, was elected chairman. The Rumanian government announced its decision to dissolve the Rumanian Danube Steamship company and to transfer its fleet and property to the joint Russian-Rumanian transport undertaking. Great Britain, France and the United States did not attend the meeting. On Nov. 15, they sent notes to the participating nations stating that they did not recognize the commission. The Lanchid, a new chain bridge over the Danube to replace one destroyed in World War II, at Budapest, was reopened on Nov. 20

Ireland.—The Milne report recommended reorganization of Irish transport with immediate acquisition of the public transport systems including the Grand Canal company. Coras Iompair Eireann would be reconstituted and would bear administrative responsibility. A bill to give effect to these recommendations was published in October.

Netherlands.—The Dutch inland water fleet numbered 17,100 vessels totalling 5,000,000 tons—its prewar level. Work proceeded on the Amsterdam-Rhine canal for 2,000-ton ships.

Rhine.—Navigation was greatly improved during 1949. Craft were able to pass in a two-way direction except in the Cologne area, where only one direction at a time was permitted. The normal channel depth of 8 ft. between Emmerich and Ruhrort was re-established as was the buoyage to enable night navigation. The harbours at Duisburg-Ruhrort were cleared almost to their prewar capacity and much new equipment, including four 200-ton lift floating cranes and nine heavy lift portal cranes of 200–600 tons capacity, was provided. Work on the Rhine-Main-Danube was continued. The Mitelland viaduct over the river Weser was reopened on Feb. 18.

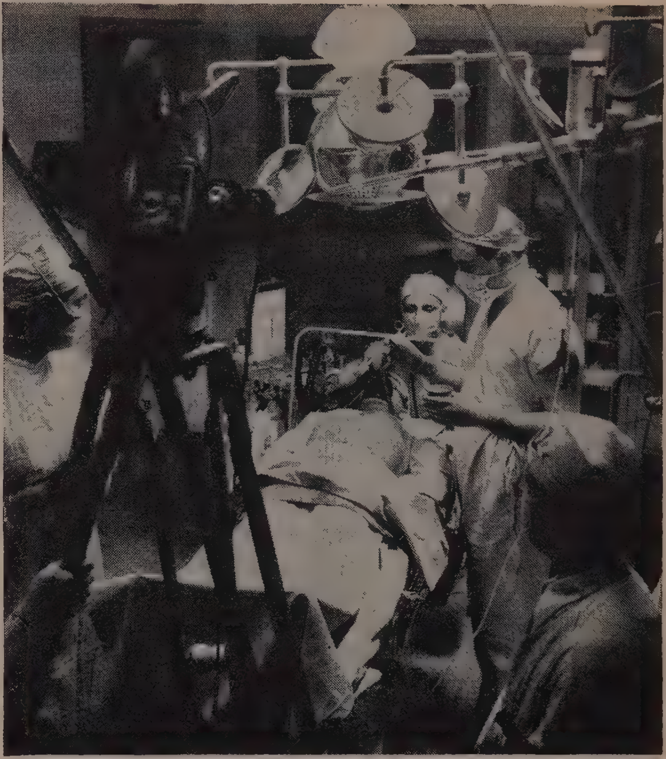
Sweden.—The Roads and Waterways administration reported on the peacetime need of the Falsterbo Ship canal, which had been cut across the peninsula of that name during World War II, to pass ships into and out of the Baltic without crossing German minefields. (*See* also AQUEDUCTS.) (W. A. F.)

Canary Islands: *see* SPAIN.

Canasta. A card game based on rummy, canasta suddenly became popular in the United States during 1949, spreading with a rapidity equalled only by mah-jongg in 1923–24 and contract bridge in 1930–32. The game was first played in Uruguay and Argentina several years before; it was introduced in the United States by Mrs. Ottilie Reilly, a bridge teacher, of New York city. Almost unknown in the country at the beginning of 1949, it was said to have had 10,000,000 players by the end of the year; 24 books on canasta had been published; more than 1,000 newspapers published instruction series on the game, special equipment for playing it enjoyed large sales.

The first canasta rules followed in the United States were those imported from Argentina, codified by Senora Josefina Artayeta de Viel; but while those rules still had some following, most U.S. writers and players adopted somewhat different rules prepared by the Regency club in New York city and adopted by a National Canasta Laws commission. (A. H. MD.)

Cancer. The cause of cancer continued under intensive study in 1949. As far as could be judged, it arises from an alteration in the cell, a so-called mutation, which may take place under a variety of conditions, including exposure of the cells to injury or infection which causes them to grow. W. R. Earle showed that if the cells of normal tissue are cultivated for a long time in an artificial culture medium their biological qualities may be altered so that they can on inoculation produce a malignant growth. His experiments were done with animal tissues, obviously, and with standard methods of tissue culture. Slight irritations produced by exposure to physical agents, such as X-ray or radium, will set up a course of events in the individual cells which represent a mutation, that is, a change into a new type of cell which is more or less permanent, and ultimately is recognizable as what is called a malignant growth. In other words, the cancer cell is simply a normal cell which under various conditions is so altered in the course of time that it is capable of extending into normal structures and ultimately causing the death of the host. In animals there are certain types of tumours which differ somewhat from those in human beings, particularly those in human beings which are apparently caused by a mutation occurring in the tissues of the breast. John J. Bittner studied cancer of the breast in a strain of mice which in all probability was due to the presence of a virus in the tissues. The virus was apparently transmitted by nursing and gave rise to a large number of malignant breast tumours if healthy animals were permitted to nurse from an infected strain. The breast tumour tissue contains minute particles which may be demonstrated only under special conditions. These small particles were believed to be a type of virus, as they could be obtained in quantity only by centrifuging at a high speed the fluid obtained from extracts of these breast cancers. The demonstration of these particles was first made by R. D. Passy and his colleagues in the department of experimental pathology, University of Leeds, Eng. The suggestion that human breast cancer may be caused by the same organism was discussed to a considerable extent in popular magazines during 1949, but there was no evidence of any such transmission of human tumours.



A STILL from the 1949 medical training film *Cancer: The Problem of Early Diagnosis*, sponsored jointly, for professional audiences, by the American Cancer society and the National Cancer institute

Treatment.—The treatment of cancer with isotopes produced by the cyclotron was being carried out on a large scale in 1949, chiefly with iodine (I^{103}) and phosphorus (P^{32}) with or without radiation as an adjuvant. The radioactive iodine was used largely in the treatment of thyroid conditions, either without the application of surgery or as a combination of treatment; some clinics gave thiouracil at first, followed by radioactive iodine, to reduce the activity of the gland, followed by excision. Others simply gave the radioactive iodine to be followed by surgery. Mild cases might be sufficiently benefited by the radioactive iodine alone.

Of the blood diseases the only one which seemed to be effectively treated is polycythaemia. In the leucaemias, reduction of the cells by the administration of radioactive substances was accomplished, but the limitations of dosage had to be carefully followed because of the destruction of the normal cells of the bone marrow as well as the pathological types. As a rule X-ray was a safer method of treatment of the leucaemias, though in expert hands a combination of radioactive material and X-ray seemed to be of benefit.

The use of high voltage X-ray was being studied in 1949, using radiation of 1,000,000 v. or more, but as might be expected, no great biological differences could be detected between the high voltages and the ordinary 200 or 300 kv. X-ray which had become fairly standardized. This was to be expected from the results published by Charles Packard, who showed by using a biological object and measuring the output of the machine in an ionization chamber that there were no differences in the lethal effect of radiation from 160 kv. to 1,000,000 kv. The only advantage of the higher voltage is that the penetration is somewhat greater and hence can influence deeper tissues, but there was always the danger with such high voltage treatment of excessive damage unless measurements were carefully made. The cost of such high energy also put it entirely outside of all but a few research institutes, and the tendency was to use radium or one of the radioactive isotopes for local treatment and moderate voltages of X-ray for general therapy, especially of internal cancer. (*See* also BIOCHEMISTRY; CHEMOTHERAPY; MEDICINE; NUTRITION, EXPERIMENTAL; SURGERY; X-RAY AND RADIOLOGY.)

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(F. C. W.)

Candy.

Sales of candy in the United States in 1949 amounted to approximately $960,000,000 on the wholesale level or about 5% less than the record $1,001,000,000 reported in 1948. The retail volume was just under $2,000,000,000. Expressed in tonnage, the 1949 confectionery business matched the 1948 output of 2,673,000,000 lb., but fell short of the all-time record production of 2,804,000,000 lb. in 1944. The average value at wholesale per pound was 35.5 cents in 1949, compared with 37.5 cents in 1948 and 23.5 cents in 1944.

The major development in the candy industry during 1949 was the return of the strong competitive situation that was in existence before World War II, but which had not been in evidence since 1941. Other important developments were: (1) the decision reached at the international cocoa conference held in London, Eng., in August, to work toward the goal of maintaining cocoa prices at existing levels; (2) increased emphasis on the mass selling of candy by syndicates and supermarkets; (3) the success enjoyed by 10-cent bars, with one 10-cent bar outselling all 5-cent candy bar leaders; (4) the impetus recorded in the candy-as-a-career program, as evidenced by the launching of a number of candy training centres; (5) the introduction of new processes and machines, the most notable of which were a new chocolate making process, a new way to make marshmallow candy and tank car delivery of chocolate coatings (liquor) in a manner similar to the delivery of corn syrup, liquid sugar, milk, oil and other liquid products; and (6) the increased flow of candy from England and other parts of Europe into the United States. (*See* COCOA.)

Chocolate coated candies continued to dominate the consumer demand. Moulded (solid) chocolate goods were also in particularly good demand. The dollar per pound box of candy was most popular in the fancy packaged goods field and an increase was noted in the "less than a dollar per pound" package.

For the first time in six years, bar type candies did not represent more than one-half of the industry's tonnage, this business showing a decline from 51% in 1948 to 47% in 1949. Packaged goods accounted for 21%, bulk goods 18%, 5- and 10-cent specialties 8%, and penny goods just under 6%.

As in previous years, the United States continued to be the greatest candy-producing country in the world, although Great Britain still led the world in per capita consumption. The per capita consumption in the United States in 1949 was about 18 lb., compared with 20.5 lb. in 1944 and 13 lb. in 1933. The per capita consumption of candy in Great Britain was 22 lb.

Imports of candy showed an increase in 1949 as against 1948 but exports continued to surpass imports. It was estimated that between 3,000,000 and 4,000,000 lb. of candy, valued at about $1,500,000, were imported into the United States in 1949. About two-thirds came from England, with some from Italy, the Netherlands and Denmark. More than 8,000,000 lb. of candy of various types, mostly nonchocolate, were exported from the United States during 1949.

(H. D. G.)

Cane Sugar: *see* SUGAR.

Canning Industry.

The United States and territorial pack of canned fruits, juices, vegetables, fish, milk and fruit and vegetable specialties in 1949 totalled approximately 533,000,000 standard cases (preliminary estimate) compared with 552,000,000 standard cases in 1948. These figures do not include poultry and other unclassified specialty products packed by the canning industry. Preliminary statistics for the 1949 pack compared with that for 1948, in terms of millions of standard cases, were shown as follows:

	1949	1948
Fruits	79.0	80.0
Fruit juices	62.0	65.0
Vegetables	178.0	185.0
Fruits and vegetable specialties	100.0	93.0
Milk	65.6	81.1
Fish	25.0	23.7
Meat*	23.2	24.2

*Total pounds divided by factor of 45.

With the exception of canned fish the canned food groups listed showed moderate to substantial reductions for 1949, as compared with 1948. On the basis of year-end estimates, the total pack reduction for these commodities was slightly less than 3.5%.

Supplies of canned foods generally for 1949 were about the same as they were for the previous season. There was a moderate increase in canned vegetables carried over from the previous year which, coupled with the slightly reduced over-all pack, was expected to make for an even supply in the 1949–50 distribution.

As in 1948, retail prices of canned fruits and vegetables, according to statistics from the U.S. bureau of labour statistics, remained closer to prewar levels than other foods, showing an increase from the 1935–39 base years of about 54% as against more than 100% for all foods. The bureau of agricultural economics of the U.S. department of agriculture estimated the per capita consumption of canned fruits and vegetables in 1949 at 122% of the 1935–39 prewar average.

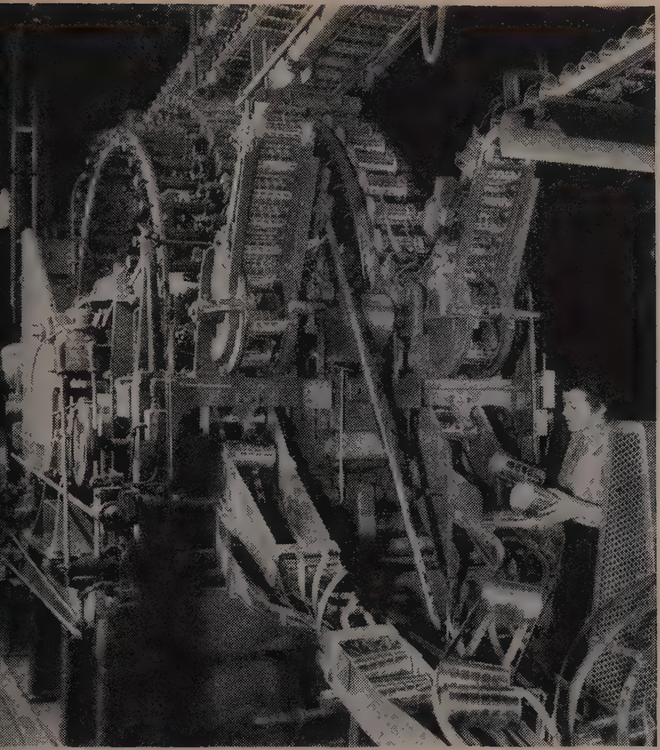
Special publicity was given to the results of the $250,000 nutrition research program, supported by the National Canners association and the Can Manufacturers institute, which in 1949 was in its seventh year. In 1949, publication was made of the results of special protein studies of canned meat and fish products which showed them to be outstanding in their contribution of complete proteins to the diet.

The government conservation order M-81 was revoked on Dec. 1, 1949, thus ending the limitation of the use of tin in can manufacture which had existed since Feb. 1942. Specification requirements for tin plate which were covered in order M-43 ended in Aug. 1949.

The International Tin Study group estimated the world production of metallic tin for Jan.–Aug. 1949 at 112,100 long tons with consumption at 80,100 tons during this period. Production and consumption for the year 1948 were 157,500 and 138,900 tons, respectively. An unofficial estimate placed the size of the U.S. tin stock pile at 85,000 tons in Dec. 1949.

(E. J. C.)

Other Countries.—Several leading British canners established new factories abroad. A former automobile factory at Port Elizabeth, South Africa, converted into a modern cannery for fruits, vegetables, soups, etc., came into operation. Another new cannery was erected in the Paarl area. A meat cannery—



MPROVED TESTING MACHINERY installed at the American Can Co. plant n Tampa, Fla., in 1949. The new equipment checked some 15,000 cans per hour and automatically discarded any that were defective

he largest in East Africa—was established in Tanganyika by a famous meat extract firm, which also obtained approval of the Anglo-Egyptian Sudan government for the erection of a cannery at Kosti to handle, when completed, 100,000 cattle annually.

There was a continued expansion of fish canning, notably in Australia and South Africa. Moves were made in South Africa to bring the fish canning concerns under unified control in order that the industry could develop along economic lines. A new cannery was built on the lonely island of Tristan da Cunha to pack crawfish tails for export to America.

Production began at the first fruit cannery to be set up in the Dominican Republic, West Indies. Several canneries in Norway started to pack chickens for export.

With regard to technical developments during 1949, it was announced that the New South Wales department of agriculture and the Commonwealth Scientific and Industrial Research organization had canned cantaloupes for the first time. The committee of direction of fruit marketing in Queensland developed a process for canning bananas and made an experimental pack to test public reaction. A development in the United States was a special can containing cream and gas under pressure, to deliver whipped cream as required on pressing a knob.

Several countries sent factory ships and floating canneries to the antarctic for the whaling season, which started in December.

(G. H. M. F.)

Cape Verde Islands: *see* PORTUGUESE COLONIAL EMPIRE.
Caribbean Commission: *see* SURINAM.
Carnegie Trusts: *see* SOCIETIES AND ASSOCIATIONS.
Caroline Islands: *see* TRUST TERRITORIES.

Cartography.

The pace in cartography in 1949 was slower than in previous years. Emphasis shifted from spectacular production to more basic and enduring works. Bibliographies, histories and similar scholarly studies appeared. National atlases of prewar quality were under way or in the process of publication. From an over-all viewpoint the wartime acceleration disappeared and a more mature aspect was beginning to show in cartography.

International.—The first truly international conference of an official nature on cartography was held by the United Nations Economic and Social council at Lake Success, N.Y., March 21 to April 1, 1949. The proceedings leading up to the meeting originated during the sixth session of the Economic and Social council in Feb. 1948 when the representative from Brazil introduced a resolution calling for the member governments to stimulate mapping, promote exchange of technical data, promote close co-operation of national cartographic services and coordinate the cartographic work of the United Nations. During debate the proposal was made that the secretary-general convene a committee of five cartographic experts and representatives of specialized or international organizations for the purpose of preparing a plan for carrying out the resolution.

In March 1948 the secretary-general transmitted the resolution to all member governments for comment and suggestions concerning its implementation. Shortly afterward the specialized and international organizations were contacted for comment. From June 2 to June 4, 1948, a round-table discussion concerning the resolution was held in Washington, D.C., by several international cartographic organizations that had meetings scheduled for the latter part of 1948. As a result of the discussions the meeting of experts was put off until 1949 so that the subject could be examined at the meetings of these organizations. In Feb. 1949 the secretary-general convoked the meeting of experts on cartography for March 21 to April 1, 1949.

The committee of experts was composed of one representative each from the United States, Brazil, the Netherlands, Belgium and the United Kingdom. Ten additional representatives from international or specialized agencies completed the committee. The comments received from member governments included 19 questions to be considered by the committee. After considering all the suggestions and questions the committee promulgated four recommendations involving international meetings of governmental cartographic agencies on a regional basis; the establishment in the secretariat of the United Nations of a cartographic office capable of serving the U.N. or other specialized agencies; the establishment of a panel of consultants on whom the U.N. could call for counsel on specific problems; the holding of periodic meetings for the purpose of reviewing progress and problems of world mapping.

The full report of the committee went far beyond reviewing the resolution and presenting recommendations. It included a review of the status of world mapping with an index to topographic maps and an index of geodetic control; a study of modern cartographic methods; and a study of the need for maps. The second volume of the report contained the text of communications received from member governments and specialized agencies. In addition to comments on the resolution the governments were requested to summarize their cartographic activities. The summaries varied in detail but in general they contained much information not previously made public. China, for the first time, issued detailed information on its mapping activities, as did Thailand and Pakistan.

United States.—Private publishers dominated the cartographic field in the United States in 1949. The Automobile Club of Southern California completed an outstanding job in survey and mapping with the publication of its road map of San Bernardino county, Calif. The mapping covered a period of five years during which crews, using trucks and trailers, covered many areas that had not been previously surveyed.

During the past few years there had been a rising demand for place name indexes and gazetteers. Several important works in this field were published during 1949. The University of

California published a volume on *California Place Names* by Erwin G. Gudde. The work was started in 1935 as a WPA project and issued in an abridged form in 1947. The final publication of 431 pages contained more than 6,000 place names with appropriate descriptions. It was one of the most comprehensive publications of its type.

Webster's Geographical Dictionary, published in 1949, was a unique publication in the field of gazetteers. This work, with more than 40,000 names, abandoned the use of latitude and longitude to locate features and designated all positions relative to well-known cities or natural features. In addition to the place name designations, this volume had a comprehensive guide to pronunciation, generics and an outline of the principles of toponymy. This was the first time these features had been published in complete form for popular use in the United States.

Lloyd A. Brown's book, *The Story of Maps,* published in 1949, was the first popular, comprehensive history of cartography to be published in the United States.

The United States geological survey issued two new sheets of the International Map 1:1,000,000. These sheets, N. K-10 Mt. Shasta and N. K-17 Lake Erie, plus seven which were in work, were all that had been planned for the United States.

Europe.—At least five countries in Europe were preparing national atlases during 1949. The Institut Royal Colonial Belge issued the first sections of its *Atlas général du Congo,* consisting of maps on phytogeography, national parks, routes of exploration and a general map. The maps were on a scale of 1:3,000,000 or 1:5,000,000 and were accompanied by explanatory texts and bibliographies in both Flemish and French. The sections were issued separately and additional parts on geology, administration, ethnology, transportation, boundaries, economics, population, linguistics, hydrology and telecommunications were in the course of preparation or projected.

The *Bibliographie cartographique internationale 1946–1947* was published in 1949 by the Comité National Français de Géographie et de l'Union Géographique Internationale. The bibliography, prepared by experts from seven countries under the direction of M. Foncin and P. Sommer, was an annotated listing of maps published in 1946. While titled "International" it concentrated on France, the Netherlands, Finland, Denmark, Portugal, Switzerland, Sweden and Belgium, which were the countries represented by the experts. The publication succeeded the *Bibliographie cartographique de la France* of which three volumes dating back to 1936 were published. The 1949 publication was the first attempt at international coverage.

International Meetings.—Cartography played an important role in the 16th International Geographical congress held at Lisbon, Port., April 8 to 15, 1949. This meeting, originally scheduled for Sept. 1948, was the first held since 1938 when the congress met in Amsterdam, Neth. The section on cartography interested itself in four major phases that included problems of representation of relief, especially on small-scale maps; mapping of heavily wooded areas; recording of reliability according to international standards; and the standardization of conventional signs and symbols. As a result of the discussions committees were appointed or continued to investigate the adaptation of the International Map 1:1,000,000 as a standard base for plotting geographical, economical or similar information; the preparation of a bibliography of ancient maps; and the mapping of populations at a scale of 1:1,000,000. Fourteen countries reported on new cartographic work that in part was amplified by an exhibit of maps and other cartographic material assembled by private individuals, institutions or government agencies from the United States, Canada, France, Belgium, Switzerland, Brazil, Italy and Portugal. (*See* also COAST AND GEODETIC SURVEY; ELECTRONICS; GEOGRAPHY; NATIONAL GEOGRAPHIC SOCIETY.)

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FILMS OF 1949.—*What Is a Map?* (Young America Films Inc.).

(W. E. Ds.)

Catastrophes: *see* DISASTERS.
Catholic Church: *see* ROMAN CATHOLIC CHURCH.
Catholic Community Service, National: *see* SOCIETIES AND ASSOCIATIONS.
Catholic Library Association: *see* SOCIETIES AND ASSOCIATIONS.
Catholic Organizations for Youth: *see* SOCIETIES AND ASSOCIATIONS.
Catholic Rural Life Conference, National: *see* SOCIETIES AND ASSOCIATIONS.
Catholic Welfare Conference, National: *see* SOCIETIES AND ASSOCIATIONS.
Cattle: *see* LIVESTOCK.
Celebes Islands: *see* NETHERLANDS OVERSEAS TERRITORIES.
Cellulose Products: *see* PLASTICS INDUSTRY; RAYON AND OTHER SYNTHETIC FIBRES.

Cement.

Postwar construction had caused the world production of cement to advance from 55,800,000 short tons in 1945 to 93,200,000 tons in 1947 and 107,100,000 tons in 1948, as compared with 102,500,000 tons in 1939.

United States.—The salient features of the cement industry in the United States during the past several years were reported as follows by the U.S. bureau of mines:

Cement Industry in the U.S.

(Millions of barrels)

	1941	1942	1943	1944	1945	1946	1947	1948
Production	166.9	185.3	135.3	92.2	104.3	166.5	189.5	208.
Portland cement. .	164.0	182.8	133.4	90.9	102.8	164.1	186.5	205.
Other varieties . .	2.9	2.6	1.8	1.2	1.5	2.5	3.0	3.
Shipments	170.4	187.8	129.5	95.6	107.8	172.1	190.4	207.
Portland cement. .	167.4	185.3	127.6	94.3	106.4	169.6	187.5	204.
Other varieties . .	2.9	2.5	1.8	1.3	1.5	2.5	2.9	3.
Stocks								
Portland cement. .	20.0	17.4	23.2	20.0	16.4	11.0	10.0	11.
Clinker	4.6	3.5	6.0	5.3	4.5	3.9	3.6	3.
Other varieties . .	0.3	0.3	0.2	0.2	0.2	0.1	0.1	0.
Exports	2.6	1.1	1.7	4.0	6.5	5.2	6.8	5.
Available supply . .	167.9	186.7	127.8	91.6	101.4	166.9	183.5	202.

New record highs were made in 1948 in both production and shipments, and for the first year since 1943 production was able to keep up with demand.

In the first three quarters of 1949 production advanced 4% and shipments 2% over the corresponding 1948 levels, to 155,792,000 bbl. and 156,032,000 bbl.

Canada.—Cement production in Canada was 12,219,363 bbl. in 1947, rising to 14,007,449 bbl. in 1948, and 11,952,485 bbl. in the first three quarters of 1949. Shipments in the same periods were 11,930,318 bbl., 14,098,632 bbl., and 12,295,02 bbl., respectively, while the domestic output was supplemented by 1,248,625 bbl., 1,120,671 bbl. and 767,476 bbl. (G. A. Ro.)

Census Data, U. S.

The population of the U.S. on July 1, 1949, including persons in military service overseas, according to preliminary estimates, was 149,215,366—an increase of 2,644,327 over the population estimated for July 1, 1948. The sources of the increase between 1948 and 1949 may be analyzed as follows: there were during the year ending June 30, 1949, 3,723,027 births, from which may be subtracted 1,442,070 deaths, leaving a natural increase of 2,280,957, which represents the major part of the population increase. The remainder was made up of the net civilian immi-

Table I.—*Estimated Population of Continental United States, Including Armed Forces Overseas, July 1, 1940, to July 1, 1949*

Date	Estimated total population	Increase over preceding date		Change in preceding period			
		Number	Per cent	Births*	Deaths*	Excess of births over deaths	Net civilian immigration
July 1, 1940	131,970,224	—	—	—	—	—	—
July 1, 1941	133,202,873	1,232,649	0.93	2,628,113	1,454,088	1,174,025	58,624
July 1, 1942	134,664,924	1,462,051	1.10	2,808,000	1,415,194	1,392,806	69,245
July 1, 1943	136,497,049	1,832,125	1.36	3,209,177	1,487,068	1,722,109	110,016
July 1, 1944	138,083,449	1,586,400	1.16	3,016,562	1,556,377	1,460,185	126,215
July 1, 1945	139,585,518	1,502,069	1.09	2,955,219	1,652,063	1,303,156	198,913
July 1, 1946	141,234,518	1,649,000	1.18	2,897,209	1,439,880	1,457,329	191,671
July 1, 1947	144,023,901	2,789,383	1.98	3,986,343	1,427,042	2,559,301	230,082
July 1, 1948	146,571,039	2,547,138	1.77	3,690,482	1,455,506	2,234,976	312,162
July 1, 1949†	149,215,366	2,644,327	1.80	3,723,027	1,442,070	2,280,957	363,370

*Estimated total, including adjustment for underregistration. †Preliminary figures.

gration, which amounted to 363,370. The rate of increase during the year ending June 30, 1949, was 1.80%, or slightly more than the increase during the preceding fiscal year (1.77%) and only a little less than the record increase of 1.98% attained in fiscal year 1947. The number of immigrants in 1949 was somewhat larger than in 1948 (363,370 net, as compared with 312,162, both figures including considerable numbers from Puerto Rico).

The natural increase was a little larger than in the preceding year by reason of a slight increase in the number of births and a slight decrease in the number of deaths. The increase in the number of births ran counter to the expectation of many statisticians working in this field—some of whom had anticipated a sharp decline from the record figures of 1947.

A preliminary estimate for Oct. 1, 1949, gave the U.S. a total population of 149,947,000, or 732,000 more than on July 1.

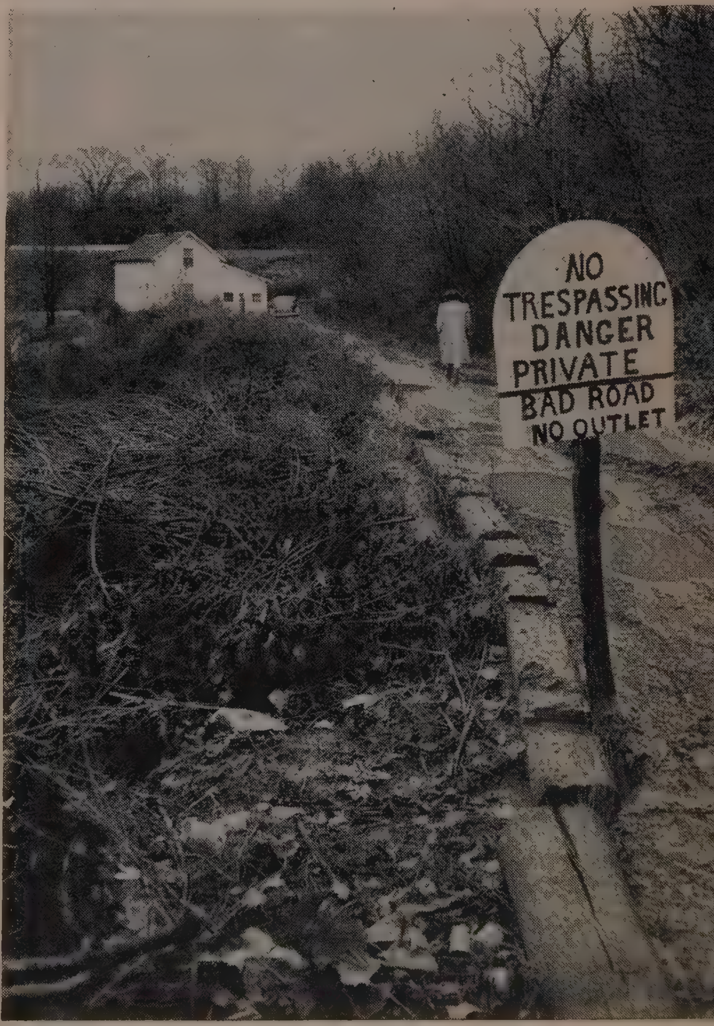
The population estimated for July 1 of each year from 1940 to 1949 is presented in Table I, which shows also the various elements used in computing the estimates; namely, births, deaths and immigration from outside continental U.S. The estimates are presented in this table to the last digit as computed instead of being rounded, not because they are assumed to be accurate to the last digit, but for convenience in summation.

Two other types of estimates were made—one series representing the population actually living in the U.S., excluding the armed forces overseas (sometimes referred to as the *de facto* population), and the second, the civilian population, excluding practically all persons in military service. In 1945 there were more than 12,000,000 persons in military service, so that the total population far exceeded the civilian population. In July 1949 the estimated civilian population of the U.S. was 147,752,000, differing from the total population by less than 1,500,000. For the same date the *de facto* population, including all military personnel in continental U.S., but excluding that overseas, was 148,720,000, and as of Oct. 1, 1949, 149,460,000. Assuming that current rates of increase would continue for the six months between Oct. 1949 and April 1950, a 1950 census total of around 151,000,000 was indicated.

Population Forecasts.—Because the birth rate and the consequent rate of population increase were maintained through fiscal year 1949 at a level almost as high as in the record year 1947, and far above expectations based on general trends in population growth, there was wide interest in forecasts of the probable size of the population in future years. All of the official forecasts issued by the bureau of the census were based on assumptions established before it became evident that the high birth rates of the second postwar year would be so well maintained, and therefore fell short of representing the future population which conditions in Nov. 1949 indicated as likely. It seemed evident at that time that the population on July 1, 1950, including military personnel outside continental U.S. would be around 152,000,000; and assuming only moderate declines in the birth rate and a continued increase in immigration, it seemed likely that the total population in 1955 might approximate 162,000,000 or 163,000,000.

Age Distribution.—Important changes in the age distribution of the population of the U.S. took place between 1940 and 1949, as indicated in Table II. The most striking changes were those which resulted from the greatly increased number of births which took place in the years following 1940. The proportion of the population under 5 yr. of age in 1949 was 10.6%, as compared with 8.0% in 1940, while the proportion 5 to 9 yr. of age increased from 8.1% to 9.0%. The proportion of the population 10 to 14 yr. old, however, decreased from 8.9% in 1940 to 7.5% in 1949, and the proportion 15 to 19 years old decreased even more, from 9.4% to 7.2%. Persons in these two age groups represented roughly the survivors of those born during the low-birth-rate depression years. At the upper end of the age scale, on the other hand, there were appreciable increases in the 1949 percentages as compared with 1940.

The importance of the high birth rates which had prevailed since 1940, and especially since 1946, as a factor affecting the age distribution may be indicated in another way by noting that while the total population of the U.S. increased 13.3%



TRIAL CENSUS TAKER at work in 1949, visiting residents of Union county, Ind., to test new questions and techniques before the real count scheduled to be taken in 1950

Table II.—*Population of the United States, Including Military Overseas, July 1, 1949, by Age, with 1940 Census for Comparison*

Age	July 1, 1949 Number	July 1, 1949 Per cent	April 1, 1940 Number	April 1, 1940 Per cent	Increase,* 1940–49 Number	Increase,* 1940–49 Per cent
All ages . . .	149,215,366	100.0	131,669,275	100.0	17,546,091	13.3
Under 5 years . .	15,805,290	10.6	10,541,524	8.0	5,263,766	49.9
5 to 9 years . . .	13,452,269	9.0	10,684,622	8.1	2,767,647	25.9
10 to 14 years .	11,161,221	7.5	11,745,935	8.9	−584,714	−5.0
15 to 19 years .	10,751,409	7.2	12,333,523	9.4	−1,582,114	−12.8
20 to 24 years .	11,884,061	8.0	11,587,835	8.8	296,226	2.6
25 to 29 years .	12,156,308	8.1	11,096,638	8.4	1,059,670	9.5
30 to 34 years .	11,348,395	7.6	10,242,388	7.8	1,106,007	10.8
35 to 39 years .	10,842,651	7.3	9,545,377	7.2	1,297,274	13.6
40 to 44 years .	9,912,068	6.6	8,787,843	6.7	1,124,225	12.8
45 to 49 years .	9,092,945	6.1	8,255,225	6.3	837,720	10.1
50 to 54 years .	8,155,221	5.5	7,256,846	5.5	898,375	12.4
55 to 59 years .	7,341,050	4.9	5,843,865	4.4	1,497,185	25.6
60 to 64 years .	6,042,100	4.0	4,728,340	3.6	1,313,760	27.8
65 to 69 years .	4,471,379	3.0	3,806,657	2.9	664,722	17.5
70 to 74 years .	3,210,665	2.2	2,569,532	2.0	641,133	25.0
75 years and over	3,588,334	2.4	2,643,125	2.0	945,209	35.8
14 years and over	110,945,754	74.4	101,102,924	76.8	9,842,830	9.7
21 and over . . .	95,748,936	64.2	83,996,629	63.8	11,752,307	14.0
Median age . . .	29.8	—	29.0	—	—	—

*A minus sign (—) denotes decrease.

between 1940 and 1949, the population under 5 yr. of age increased 49.9%, and that from 5 to 9 yr. of age increased 25.9%, as against actual decreases of 5.0% and 12.8%, respectively, in the age groups 10 to 14 and 15 to 19. The fact that the fundamental increase in the older groups of the population was going on at a rather rapid rate, in spite of the fact that their percentages of the total increased but little, was brought out by such figures as the rates of increase for persons 70 to 74 yr. of age and 75 and over, which were, respectively, 25.0% and 35.8%.

In spite of the very heavy increase in the number of persons under 10 yr. of age, however, the median age of the entire population increased from 29.0 in 1940 to 29.8 in 1949.

The population 14 yr. old and over, from which is drawn the labour force of the nation, increased only 9,842,830, or 9.7% (from 101,102,924 in 1940 to 110,945,754 in 1949), while the much smaller population under 14 yr. of age increased 7,703,261, or 25.2%.

Internal Migration.—In a sample survey made by the bureau of the census in April 1949, persons who had moved from one county to another during the preceding year were classified as migrants and certain other data were obtained with regard to the extent of the movement. The results of this survey, in common with other data based on sample inquiries, are subject to a moderate sampling variability. With respect to these sample-based statistics it may be said in general that the totals and the larger items in any given table are subject to a fairly small error from this source, but that the smaller subtotals, and in particular the differences between one figure and another, are subject to a possibility of error which increases with the decrease in the size of the figures in question. The migration data are summarized in Table III.

Of the 144,101,000 persons one year old and over in the civilian population in April 1949, 27,603,000, or 19.2%, were living in a different house from the one they occupied on April 1, 1948. Of these, 18,792,000 had moved from one house to another within the same county, while 8,335,000 had moved at least from one county to another and were therefore classified as migrants. And in addition, nearly 500,000 had returned from abroad.

Of the migrants, 3,992,000, representing 2.8% of the total population one year old and over, had moved simply from one county to another within the same state, while 1,782,000 had moved between contiguous states, and 2,562,000 had moved between noncontiguous states, these latter moves representing, on the average, much longer distances.

The percentage of migrants was materially lower in the population living in urban areas in 1949 than in the population living in rural-nonfarm or rural-farm areas, the figures being 5.1% for urban areas, and 6.9% and 6.7%, respectively, for the two types of rural areas. With respect to the several types of migration, it may be noted that the proportion of the whole number of migrants who had moved between noncontiguous states (that is, for longer distances) was materially higher in the urban and rural-nonfarm areas than in the rural-farm, though among the nonmigrants the proportion moving from one house to another in the same county was materially higher in rural-nonfarm areas than in either the urban or the rural-farm.

The classification of the migrant and nonmigrant populations by age, as shown in Table IV, indicates that in general persons under 35 yr. of age were more likely to be migrants than those 35 yr. old and over and that the tendency toward movement of this type decreased with further increase in age. The median age of the migrants was only 25.2 yr., as compared with 31.3 for the nonmigrants.

Of the total male population, 6.05% were classified as migrants, as compared with 5.53% of the female population. For some of the specific ages shown in Table IV, however, there were considerably greater differences. Thus, 10.28% of the females 18 to 19 yr. old had moved from one county to another in the year preceding the survey, as compared with 8.43% of the males, while in the age group 20 to 24, 11.30% of the males were classified as migrants, as compared with 9.96% of the females.

The number of migrants returned in April 1949 was considerably smaller than the number returned in a similar survey made in April 1948, but the pattern of the internal relations of the data was substantially the same as in the earlier year.

Marital Status.—The proportion of the adult population that was reported as married in the 1949 survey was decidedly higher than that shown in the 1940 census. In fact, the proportion married had been steadily rising, decade by decade, since 1890, the earliest date for which the census reports gave information on marital status. The data for 1949 and 1940 are summarized in Table V.

Table III.—*Migration between April 1948 and April 1949, by Sex and by Urban-Rural Residence*

(Data relate to the civilian population one year old or over in April 1949. A migrant is defined as a person who had moved at least from one county to another in the 12 months preceding the survey. Figures based on a small sample survey made in April 1949)

Migration status	Total		By sex				By residence					
			Male		Female		Urban		Rural—nonfarm		Rural—farm	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Total civilian population one year old and over (in April 1949)	144,101,000	100.0	71,118,000	100.0	72,983,000	100.0	84,772,000	100.0	32,001,000	100.0	27,328,000	100.0
Nonmigrants	135,289,000	93.9	66,524,000	93.5	68,765,000	94.2	80,145,000	94.5	29,747,000	93.0	25,398,000	92.9
Living in:												
Same house as on April 1, 1948	116,498,000	80.8	57,321,000	80.6	59,177,000	81.1	69,391,000	81.9	24,839,000	77.6	22,268,000	81.5
Different house in same county	18,792,000	13.0	9,204,000	12.9	9,588,000	13.1	10,754,000	12.7	4,908,000	15.3	3,130,000	11.5
Migrants	8,335,000	5.8	4,301,000	6.0	4,034,000	5.5	4,321,000	5.1	2,195,000	6.9	1,819,000	6.7
Movement:												
From one county to another within a state	3,992,000	2.8	2,008,000	2.8	1,984,000	2.7	1,739,000	2.1	1,085,000	3.4	1,168,000	4.3
Between contiguous states	1,782,000	1.2	962,000	1.4	819,000	1.1	998,000	1.2	442,000	1.4	342,000	1.3
Between noncontiguous states	2,562,000	1.8	1,331,000	1.9	1,231,000	1.7	1,584,000	1.9	668,000	2.1	309,000	1.1
Persons abroad on April 1, 1949	476,000	0.3	292,000	0.4	184,000	0.3	306,000	0.4	60,000	0.2	111,000	0.4

Table IV.—*Migration between April 1948 and April 1949, by Age and Sex*

(Figures based on a small sample)

Age and sex	Total civilian population	Non-migrants	Migrants Number	Migrants Per cent	Persons abroad on April 1, 1948
Both sexes					
Total, 1 yr. old and over	144,101,000	135,289,000	8,335,000	5.78	476,000
1 to 13 yr.	34,651,000	32,405,000	2,154,000	6.22	92,000
14 to 17 yr.	8,379,000	7,993,000	367,000	4.38	19,000
18 and 19 yr. . . .	4,116,000	3,706,000	388,000	9.43	22,000
20 to 24 yr.	11,543,000	10,214,000	1,226,000	10.62	104,000
25 to 34 yr.	23,178,000	21,104,000	1,950,000	8.41	124,000
35 to 44 yr.	20,601,000	19,552,000	984,000	4.78	65,000
45 to 64 yr.	30,433,000	29,454,000	938,000	3.08	41,000
65 yr. and over. . .	11,200,000	10,861,000	328,000	2.93	10,000
Median age	30.8	31.3	25.2	—	25.1
Male					
Total, 1 yr. old and over	71,118,000	66,524,000	4,301,000	6.05	292,000
1 to 13 yr.	17,670,000	16,558,000	1,074,000	6.08	37,000
14 to 17 yr.	4,211,000	4,007,000	197,000	4.68	7,000
18 and 19 yr. . . .	1,899,000	1,729,000	160,000	8.43	10,000
20 to 24 yr.	5,591,000	4,871,000	632,000	11.30	88,000
25 to 34 yr.	11,196,000	10,103,000	1,017,000	9.08	77,000
35 to 44 yr.	10,103,000	9,512,000	553,000	5.47	39,000
45 to 64 yr.	15,127,000	14,588,000	510,000	3.37	29,000
65 yr. and over. . .	5,321,000	5,158,000	158,000	2.97	5,000
Median age	30.5	31.0	25.9	—	25.5
Female					
Total, 1 yr. old and over	72,983,000	68,765,000	4,034,000	5.53	184,000
1 to 13 yr.	16,981,000	15,847,000	1,080,000	6.36	54,000
14 to 17 yr.	4,168,000	3,987,000	170,000	4.08	12,000
18 and 19 yr. . . .	2,217,000	1,977,000	228,000	10.28	12,000
20 to 24 yr.	5,952,000	5,343,000	593,000	9.96	15,000
25 to 34 yr.	11,982,000	11,001,000	933,000	7.79	48,000
35 to 44 yr.	10,498,000	10,040,000	432,000	4.12	26,000
45 to 64 yr.	15,307,000	14,867,000	428,000	2.80	12,000
65 yr. and over. . .	5,879,000	5,704,000	170,000	2.89	5,000
Median age	31.0	31.6	24.5	—	24.7

Of the 56,001,000 females 14 yr. old and over in the civilian population of the U.S. on April 1, 1949, 37,013,000, or 66.1%, were married, whereas in 1940 only 59.5% were married, and in 1890 less than 55%. Of the civilian male population 14 yr. old and over in 1949, 68.2% were married, as compared with 59.7% in the population covered by the census of 1940 and a little more than 52% in 1890. It should be noted, however, that slightly more than 1,000,000 males, for the most part single, were omitted from the count of the civilian population in 1949 because they were in military service. If the percentage married had been computed for the entire population, including those in military service, the figure would have been somewhat lower.

Separate figures were obtained both in the 1949 survey and in the 1940 census for married persons where both husband and wife were living in the household at the time of the inquiry, and for "married, spouse absent." Thus, of the 36,474,000 married men returned in 1949, 35,323,000, or 96.8%, were classified as with "wife present." The remaining 1,151,000 represented in part cases of separation which might eventually result in divorce, but probably more often cases where the husband was living apart from his wife (or vice versa) in order to obtain employment or for some other temporary economic reason.

Table V.—*Marital Status of Persons 14 Yr. Old and Over, by Sex, 1949 and 1940*

(Figures for 1949 based on a small sample)

Marital status	1949 Number	1949 Per cent	1940 Number	1940 Per cent
Male				
Total 14 and over* . . .	53,448,000	100.0	50,553,748	100.0
Single	13,952,000	26.1	17,593,379	34.8
Married	36,474,000	68.2	30,192,334	59.7
Wife present	35,323,000	66.1	28,657,820	56.7
Wife absent	1,151,000	2.2	1,534,514	3.0
Widowed.	2,181,000	4.1	2,143,612	4.2
Divorced	842,000	1.6	624,423	1.2
Female				
Total 14 and over* . . .	56,001,000	100.0	50,549,176	100.0
Single	11,174,000	20.0	13,935,866	27.6
Married	37,013,000	66.1	30,090,488	59.5
Husband present.	35,323,000	63.1	28,516,937	56.4
Husband absent	1,690,000	3.0	1,573,551	3.1
Widowed.	6,582,000	11.8	5,700,202	11.3
Divorced	1,233,000	2.2	822,620	1.6

*For 1949, civilian population; for 1940, total population (which at that time did not differ materially from the civilian population).

Married Couples.—There was considerable interest, largely from the point of view of housing, in the number and proportion of married couples who had not set up their own separate households but were living as parts of other households—rather largely in the households of the parents of either husband or wife. Specific figures on this relationship are presented in Table VI.

Table VI.—*Married Couples by Household Relationship, 1940 and 1947–49*

(Figures for 1947–49 based on a small sample)

Date	Total	With husband as head of household	With husband not as head of household Number	With husband not as head of household Per cent of total
April 1940	28,516,937	26,570,502	1,946,435	6.83
April 1947	33,406,000	30,545,000	2,861,000	8.56
April 1948	34,289,000	31,834,000	2,455,000	7.16
April 1949	35,323,000	33,167,000	2,156,000	6.10

Of the 35,323,000 married couples returned in the survey of April 1949, 2,156,000, or 6.10% were living in households of which the husband was not the head. This second figure represents, as already indicated, couples who were sharing the living quarters of other persons or were living in hotels, rooming houses, etc. The percentage of married couples who had not established their own households had decreased from 8.56 in 1947 to 7.16 in 1948, and finally to 6.10 in 1949, which figure was appreciably less than the corresponding figure for April 1940, which was 6.83. These figures may be taken as an indication that the amount of "doubling up" of families, which formed such a disturbing problem in the war years and immediately thereafter, was well on the way toward a solution in the spring of 1949.

Employment and Unemployment.—The civilian labour force, which includes both the employed and the unemployed, was estimated at 62,576,000 in Oct. 1949, as compared with 61,775,000 in Oct. 1948. Of the increase of 801,000, or 1.3%, 664,000 were women. The total population 14 yr. old and over increased in this same 12-month period by about 1,100,000.

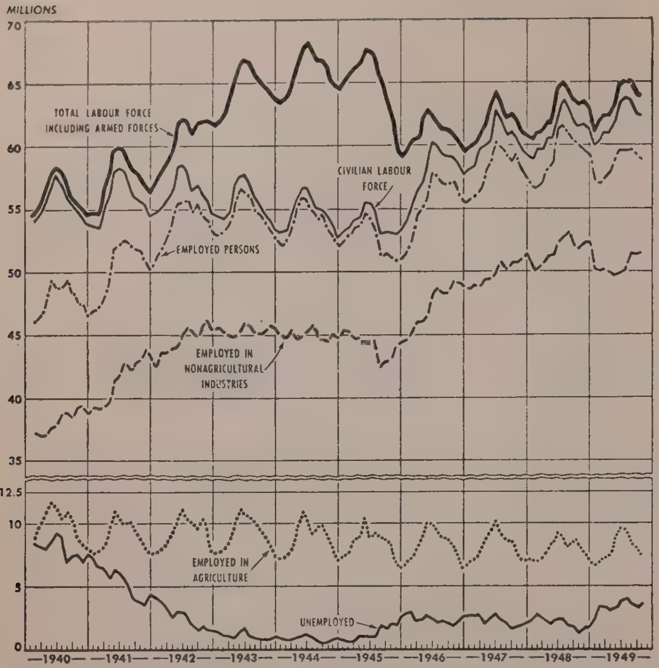
The data on employment status for Oct. 1949 and Oct. 1948 are summarized in Table VII, which shows also the amount of change during the year preceding Oct. 1949.

Table VII.—*Population by Employment Status, Oct. 1949 and Oct. 1948*

(Employment figures based on a small sample)

Employment status	Oct. 1949	Oct. 1948	Net change
Total noninstitutional population 14 years old and over .	109,975,000	108,853,000	+1,122,000
Total labour force including armed forces	64,021,000	63,166,000	+855,000
Armed forces	1,445,000	1,391,000	+54,000
Civilian labour force	62,576,000	61,775,000	+801,000
Employed	59,001,000	60,134,000	−1,133,000
Unemployed	3,576,000	1,642,000	+1,934,000
Not in the labour force	45,953,000	45,685,000	+268,000

The total labour force, including the armed forces, was estimated at 64,021,000 in Oct. 1949, being 855,000 higher than a year earlier, and about 6,500,000 higher than in Nov. 1941, just prior to the entry of the U.S. into World War II. The increase in the number of women in the labour force since 1941 represented slightly more than half of the total increase. Since the labour force participation rate for women is much lower than that for men, this approximately equal division of the increase connotes an appreciable increase in the percentage of women in the labour force. While the percentage of the male population 14 yr. old and over in the total labour force was about the same in 1949 (83.6 in October) as in 1941, the percentage of the female population in the labour force had increased from 29.9 in Oct. 1941 to 33.2 in Oct. 1949. Even within the year between 1948 and 1949 this percentage increased from 32.4 to 33.2. The estimated number of employed persons in Oct. 1949 was 59,001,000, or 1,133,000 less than in Oct. 1948. During the



TRENDS in the labour force, 1940 to 1949 (Source: U.S. Bureau of the Census)

same period there was an increase of 1,934,000 in the number of unemployed persons (from 1,642,000 to 3,576,000), while the number of persons not in the labour force increased by 268,000.

The number of unemployed, which had been maintained at figures around 2,000,000 for many months, first passed the 3,000,000 mark in Feb. 1949, and attained a maximum (for recent years) of 4,095,000 in July 1949. Lower figures were reported for subsequent months through November. The unemployment rate in Oct. 1949 (that is, the proportion of those in the civilian labour force who were unemployed) was 5.7%, as compared with 2.7% a year earlier. The average duration of unemployment for both men and women unemployed in Oct. 1949 had been about 11 weeks.

Table VIII.—*Civilian Employment and Unemployment in the United States: July 1945 to Oct. 1949*

(Figures are exclusive of institutional population as well as persons in the armed forces. Employment data based on a small sample)

Date and sex	Civilian population 14 years old and over	Total number in labour force	Per cent of population	Employed	Unemployed	
					Number	Per cent of labour force
Total						
July 1945 . .	93,290,000	55,350,000	59.3	54,400,000	950,000	1.7
July 1946 . .	103,650,000	60,110,000	58.0	57,840,000	2,270,000	3.8
July 1947 . .	106,133,000	62,664,000	59.0	60,079,000	2,584,000	4.1
July 1948 . .	107,304,000	63,842,000	59.5	61,615,000	2,227,000	3.5
Oct. 1948 . .	107,462,000	61,775,000	57.5	60,134,000	1,642,000	2.7
Jan. 1949 . .	107,649,000	60,078,000	55.8	57,414,000	2,664,000	4.4
April 1949. .	107,881,000	60,835,000	56.4	57,819,000	3,016,000	5.0
July 1949 . .	108,201,000	63,815,000	59.0	59,720,000	4,095,000	6.4
Oct. 1949 . .	108,530,000	62,576,000	57.7	59,001,000	3,576,000	5.7
Male						
July 1945 . .	40,290,000	35,270,000	87.5	34,790,000	480,000	1.4
July 1946 . .	49,880,000	42,710,000	85.6	40,950,000	1,760,000	4.1
July 1947 . .	51,591,000	44,861,000	87.0	43,071,000	1,789,000	4.0
July 1948 . .	52,158,000	45,437,000	87.1	43,989,000	1,448,000	3.2
Oct. 1948 . .	52,168,000	43,851,000	84.1	42,763,000	1,088,000	2.5
Jan. 1949 . .	52,205,000	43,161,000	82.7	41,150,000	2,011,000	4.7
April 1949. .	52,289,000	43,668,000	83.5	41,463,000	2,205,000	5.0
July 1949 . .	52,453,000	45,267,000	86.3	42,422,000	2,845,000	6.3
Oct. 1949 . .	52,611,000	43,988,000	83.6	41,426,000	2,563,000	5.8
Female						
July 1945 . .	53,000,000	20,080,000	37.9	19,610,000	470,000	2.3
July 1946 . .	53,770,000	17,400,000	32.4	16,890,000	510,000	2.9
July 1947 . .	54,542,000	17,803,000	32.6	17,008,000	795,000	4.5
July 1948 . .	55,146,000	18,405,000	33.4	17,626,000	779,000	4.2
Oct. 1948 . .	55,294,000	17,924,000	32.4	17,371,000	554,000	3.1
Jan. 1949 . .	55,444,000	16,917,000	30.5	16,264,000	653,000	3.9
April 1949. .	55,592,000	17,167,000	30.9	16,356,000	811,000	4.7
July 1949 . .	55,748,000	18,548,000	33.3	17,298,000	1,250,000	6.7
Oct. 1949 . .	55,919,000	18,588,000	33.2	17,575,000	1,013,000	5.4

The data from the reports on the labour force are presente for selected dates from July 1945 to Oct. 1948 in Table VIII while the chart on this page shows the principal items in graphi form for the entire period from April 1940 to Oct. 1949.

Industry.—Of the total number of male workers employed i Oct. 1949, 6,302,000, or 15.2%, were employed in agricultur and 35,123,000 in nonagricultural industries. Of the femal workers, only 1,408,000, or 8.0%, were employed in agriculture as compared with 16,167,000 in nonagricultural industries. Th percentages of employment in agriculture were considerabl higher in July, at the peak of farming operations and somewhat lower in January, when agricultural activity was approximately at its lowest point.

These figures are summarized on a quarterly basis in Tabl IX, which distributes the workers also by number of hour worked during the survey week.

Table IX.—*Persons Employed in Nonagricultural Industries and in Agricultur by Hours Worked during Survey Week: Oct. 1948 to Oct. 1949*

(Thousands of civilians 14 yr. old and over. Data based on a small sample)

Class, sex and date	Total employed	Worked 35 hr. or more	Worked 15–34 hr.	Worked 1–14 hr.	With job bu not a work
Employed in nonagricultural industries					
Male:					
Oct. 1948	36,016	31,081	3,092	711	1,133
Jan. 1949	35,193	29,888	3,075	879	1,35
April 1949	34,714	29,621	3,237	825	1,03
July 1949	34,799	20,820	9,604	651	3,72
Oct. 1949	35,123	29,631	3,234	901	1,35
Female:					
Oct. 1948	15,490	11,370	2,655	1,015	45
Jan. 1949	15,458	11,426	2,458	1,020	55
April 1949	15,285	11,140	2,676	1,063	40
July 1949	15,274	6,866	5,097	787	2,52
Oct. 1949	16,167	11,723	2,822	1,127	49
Employed in agriculture					
Male:					
Oct. 1948	6,747	5,772	738	124	11
Jan. 1949	5,957	4,102	1,261	275	31
April 1949	6,749	5,372	1,023	153	20
July 1949	7,623	6,356	916	185	16
Oct. 1949	6,302	4,896	910	247	24
Female:					
Oct. 1948	1,880	1,039	717	99	2
Jan. 1949	806	197	464	117	2
April 1949	1,071	284	677	90	2
July 1949	2,024	970	955	77	2
Oct. 1949	1,408	566	694	118	3

Hours of Work.—The average hours of work during th week of Oct. 2–8, 1949, for all persons at work was 42.2 wit 47.9 for workers in agriculture, and 41.3 for those in nonagricultural industries. There were also considerable number of persons classified as employed because they had a job o business from which they were absent during the survey wee for some temporary reason such as sickness or vacation but t which they expected to return shortly so that they were not i the market for other employment. The maximum number o persons in this status was reported for July, which is a popula vacation month.

The numbers of these persons are shown in the last colum of Table IX.

Part-time Workers.—Of the 59,947,000 persons returned a employed in the second week of Aug. 1949, as indicated by th figures in Table X, 8,293,000, or 13.8%, worked only part time that is, less than 35 hr. Of this number, 3,218,000 usuall worked full time at the jobs they then had, and 5,075,00 usually worked part time. Of the part-time workers on full time jobs, 1,474,000 worked part time during the survey wee because of such economic factors as slack work, layoffs, jo turnover, etc. The remainder, 1,744,000, worked part time because of illness, vacation, bad weather and various persona and miscellaneous reasons.

As between male and female workers, it may be noted tha 21.7% of the employed women worked part time and onl

Table X.—*Employed Persons in the Civilian Population Working Full Time and Part Time, by Sex: Aug. 1949*

(Data based on a small sample. Numbers in thousands)

Employment status	Both sexes Number	Both sexes Per cent	Male Number	Male Per cent	Female Number	Female Per cent
Total employed persons (14 yr. old and over)	59,947	100.0	42,664	100.0	17,303	100.0
Worked full time during survey week	47,131	78.6	35,297	82.8	11,835	68.4
Worked part time during survey week	8,293	13.8	4,539	10.6	3,754	21.7
Usually work full time at present job	3,218	5.4	2,403	5.6	815	4.7
Worked part time because of economic factors	1,474	2.5	1,020	2.4	454	2.6
Worked part time for other reasons	1,744	2.9	1,383	3.2	361	2.1
Usually work part time at present job	5,075	8.5	2,136	5.0	2,939	17.0
Prefer and could accept full-time work	1,081	1.8	688	1.6	393	2.3
Do not prefer or could not accept full-time work	3,994	6.7	1,448	3.4	2,546	14.7
With a job but not at work	4,522	7.5	2,808	6.6	1,714	9.9
Usually work full time at present job	4,190	7.0	2,677	6.3	1,513	8.7
Usually work part time at present job	332	0.5	131	0.3	201	1.2

10.6% of the employed men.

Of those who usually worked part time on the jobs which they held in Aug. 1949, by far the larger portion, 3,994,000, either preferred part-time work or were not in a position to accept full-time employment. This was the situation with 67.8% of the males on part-time jobs, and 86.6% of the females, a large fraction of the latter being housewives whose home duties would not permit them to accept full-time employment.

Of the whole number of unemployed persons returned in Aug. 1949 (3,689,000), 91.9% were looking for full-time work and 8.1% were looking only for part-time work. The percentage of the female unemployed who were looking for part-time work only was 10.9, as compared with 6.8 for the male unemployed.

Family Income.—Families in the U.S. had an average (median) income of $3,187 in the calendar year 1948, counting money income only, according to a sample survey made in April 1949. This figure may be compared with $3,033 in 1947, $2,621 in 1945 and $2,533 in 1944. A family was defined as a group of two or more related persons living together in the same household; the family income was the sum of the money incomes of all the members of the family. The distribution of the whole number of families in 1948 in accordance with income is shown in Table XI.

Table XI.—*Distribution of Families (of Two or More Persons) by Total Money Income, for the United States, Urban and Rural: 1948*

(Figures based on a small sample)

Total money income level	Total	Urban	Rural—nonfarm	Rural—farm
Number of families (thousands)	38,537	23,287	8,531	6,720
Per cent	100.0	100.0	100.0	100.0
Less than $500	4.8	2.6	4.4	12.2
$500 to $999	5.8	3.6	5.9	13.0
$1,000 to $1,499	7.1	5.0	8.0	13.1
$1,500 to $1,999	7.4	5.9	8.8	10.9
$2,000 to $2,499	10.4	9.4	12.5	10.8
$2,500 to $2,999	10.2	10.0	11.5	9.1
$3,000 to $3,499	11.6	12.5	11.7	8.6
$3,500 to $3,999	9.1	10.3	8.8	5.4
$4,000 to $4,499	7.6	8.9	7.3	3.6
$4,500 to $4,999	5.3	6.4	4.8	2.5
$5,000 to $5,999	8.1	9.9	6.8	3.7
$6,000 to $9,999	9.8	12.2	7.5	4.7
$10,000 and more	2.9	3.3	2.1	2.4
Median income	$3,187	$3,551	$2,954	$2,036

Although 8,000,000 families (more than one out of every five) had incomes of $5,000 or more in 1948, there were still many families (4,100,000) with incomes less than $1,000, and 5,600,000 more with incomes between $1,000 and $1,999.

There were wide differences in the incomes of urban and rural families in 1948, as in the earlier years for which data were available. The median income of urban families in 1948 was $3,551, and of rural-nonfarm, $2,954, while the money income of rural-farm families was only $2,036. It must be noted, however, that the farm families obtained from their farms many consumption items for which the urban families had to expend money. The effective total income of the rural-farm families was therefore considerably higher than the money income.

Households.—The number of households in the U.S. had increased from 16,187,185 in 1900 to 34,948,666 in 1940, thus more than doubling in number during a period in which the population increased only 73.7%. By 1949 the number had increased to 42,107,000, the actual addition to the number of families during this nine-year period being nearly one-half the addition of the preceding 30 yr. The figures are shown for selected years in Table XII.

The explanation of the situation in which the number of households increased so much more rapidly than the population lies, of course, in the fact that the average size of the families was steadily decreasing. The average in 1900 was 4.69, in 1940, 3.78, and in 1949, 3.54. (*See* also ALIENS; BIRTH STATISTICS; EMPLOYMENT; HOUSING; IMMIGRATION AND EMIGRATION; MARRIAGE AND DIVORCE; WAGES AND HOURS; WEALTH AND INCOME, DISTRIBUTION OF.) (L. E. T.)

1947 Census of Manufactures.—The census of manufactures for the United States provides comprehensive statistics on the output of manufacturing industries, the manpower and materials resources used, the inventories held and the expenditures made for new plant and equipment. The 1947 census was the first to be taken since 1939. Figures were released in 1949.

Scope and Content.—The 1947 census of manufactures covered the 48 states and the District of Columbia. Manufacturing activities in Alaska, Hawaii and Puerto Rico, which had been included in the decennial censuses of 1929 and 1939, were not covered in this census.

All establishments primarily engaged in manufacturing, as defined by the standard industrial classification system used by all U.S. government agencies, and employing one or more persons were covered in the census. According to this definition, establishments are classified as manufacturing if they are engaged in the mechanical or chemical transformation of inorganic or organic substances into new products. These activities are usually carried on in plants, factories or mills, which characteristically use power-driven machines and materials-handling equipment. Manufacturing production is usually carried on for the wholesale market, for transfer to other manufacturing establishments of the same company or to order of industrial users rather than for direct sale to the household consumer. A manufacturing industry consists of a group of establishments primarily engaged in the production of similar commodities or utilizing the same manufacturing processes. Establishments reporting in the 1947 census were classified into 453 such industries.

In order to collect figures on the many different products manufactured, it was necessary to use more than 200 different report forms. With a few exceptions, the general information requested was the same for all forms; but, in addition, each form contained inquiries adapted to the production of commodities in particular industries, and for some industries to the

Table XII.—*Number of Households and Population per Household: 1900–49*

(Figures for 1947, 1948 and 1949 are based on a small sample)

Date	Households	Population	Population per household
1900	16,187,185	75,994,575	4.69
1910	20,255,555	91,972,266	4.54
1920	24,351,676	105,710,620	4.34
1930	29,979,841	122,775,046	4.10
1940	34,948,666	131,970,224	3.78
1947	39,138,000	144,023,901	3.68
1948	40,720,000	146,571,039	3.60
1949	42,107,000	149,215,366	3.54

particular materials consumed and equipment in use. The product and materials section of each form was the result of intensive study of the 1939 census reports and extensive consultation with other federal agencies, manufacturers and trade associations in an effort to provide the most useful information consistent with the ability of manufacturers to report the desired data.

The 1947 census report forms were distributed and, for the most part, returned by mail; however, manufacturers who did not send in a report or whose reports were incomplete or otherwise inadequate were reached by telephone or personal visit from the field offices of the census bureau. An important exception to this procedure was made in the case of the highly mobile eastern lumber mills, which were enumerated entirely by field agents.

In conducting the census of manufactures, reports are collected from individual manufacturing establishments. A company operating establishments at more than one location is required to submit separate reports for each establishment. Census figures, therefore, differ from those prepared on a company basis; *e.g.*, from consolidated reports which not only combine activities at different locations but also include the nonmanufacturing activities of companies primarily engaged in manufacturing. Census figures also differ to some extent from other tabulations based on establishment reports, where the definition of an establishment is not so rigidly applied. A reconciliation of the differences between census figures and those compiled by other government agencies was undertaken. Statistics on number of establishments and employees compiled in the census of manufactures for 1947 differed, in some cases rather markedly, as to region and industry from those published by other federal agencies. Preliminary results indicated that these differences arose chiefly from the more precise classification of establishments made possible by the detailed reports submitted to the census bureau.

The 1947 census of manufactures reports were published in three volumes. The industry volume provides statistics for each manufacturing industry. These statistics include the value of products shipped, value added by manufacture (the amount by which the value of products shipped exceeds the cost of materials and supplies) and the quantity and value of about 6,000 individual products. Manpower resources are measured by the labour employed, the man-hours worked and employee earnings. Material resources include materials put into production, fuel and electricity consumed, containers and other supplies used, metal-working facilities in operation and trucks and trailers operated. In addition, the statistics include the quantity and cost of about 150 selected materials consumed. The state volume shows for each state its important metropolitan areas and industrial counties, selected statistics for each industry of consequence in that state or its geographic subdivisions. Totals for all industries are shown for all counties and for cities of more than 10,000 population. The summary volume shows U.S. totals by industry and geographic area totals on the following subjects: employment and pay rolls, size distribution of establishments, inventories, capital expenditures, fuel consumption, highway motor vehicles, consumption of important materials and metal-working operations.

The different chapters of these volumes were also published as separate reports. Thus, a person who is especially interested in a particular group of industries, say rubber products, or in a particular area of the country, say the state of New Jersey, can obtain statistics for these alone.

In addition to these volumes, a special product supplement was published. This volume assembles in convenient reference form 1947 and 1939 statistics for the more than 6,000 products shown in more than 100 different tables of the industry reports.

Test of Coverage.—In the 1947 census of manufactures for the first time a test was made of the completeness of coverage. After the regular census-taking period, enumerators made a field canvass of a representative sample of manufacturing establishments as a check on the coverage of the original mail canvass. Preliminary results of this check indicated that for the country as a whole the census covered all but about 2% (or approximately 250,000) of all manufacturing employees, and that many of the omitted establishments were on the border line between manufacturing and other types of activity.

Expansion of Information on Individual Products, Materials and Equipment.—In the 1947 census of manufactures, statistics were published for more than 6,000 individual products as compared with approximately 4,500 in 1939 and about 850 in 1899. The 1947 expansion in product detail was accomplished despite the fact that products of relatively small value, published in the 1939 reports, were not shown separately on the 1947 forms. The number of individual materials for which consumption statistics were published in the 1947 census was only 150 as compared with 275 in 1939. For the 1947 census, however, the materials were selected in such a way as to provide more comprehensive over-all coverage. First, all unimportant materials were omitted from the 1939 list. And second, statistics for the important materials were collected in 1947, to a much greater extent than in 1939, from all industries consuming appreciable quantities of these materials. As a result more significant statistics on individual materials were published in the 1947 than in any previous census. Also on the forms sent to 110 industries, the 1947 census contained a new question to provide a measure of metal-working facilities in manufacturing. The number of establishments performing metal-working operations, classified by size of the specified operation, were published by industry and state.

Classes of Products.—In addition to the individual products ordinarily published in the census of manufactures, value figures for classes of these products were published. The approximately 6,000 individual products were grouped into about 1,000 classes. State data were published for all product classes instead of selected products. For the first time, each establishment was classified according to the extent to which it specialized in production of one of these classes of products.

Industry Statistics for Geographic Divisions.—Selected industry statistics were provided for the nine census geographic divisions. Industry group statistics were provided for the 127 largest counties in terms of manufacturing employment, but no industry statistics were provided for incorporated cities. The number of metropolitan areas for which individual industry statistics were presented was expanded from the 33 areas of earlier years to 53 areas in 1947. A special table shows for each county in the United States the number of establishments in

Table XIII.—*General Statistics for All Manufacturing Establishments in the United States: 1899–1947**

Item	1947	1939	1929	1919	1909	1899
Number of establishments	240,881	173,802	206,663	270,231	264,810	204,750
Average number of employees (thousands)	14,294	9,527	9,660	9,837	7,012	4,850
Total salaries and wages (millions)	$ 39,690	$ 12,706	$ 14,284	$ 12,427	$ 4,105	$ 2,259
Average number of production workers (thousands)	11,916	7,808	8,370	8,465	6,262	4,502
Wages of production workers (millions)	$ 30,242	$ 8,998	$ 10,885	$ 9,664	$ 3,205	$ 1,893
Value added by manufacture (millions)	$ 74,426	$ 24,487	$ 30,591	$ 23,842	$ 8,160	$ 4,647

*The figures for 1947 include all establishments employing one or more persons at any time during the year; for 1929 and 1939 those having products valued at $5,000 or more; and for 1899–1919 those having products valued at $500 or more. The figures for 1939, but not for earlier years, have been revised to exclude data for establishments classified as manufacturing in 1939 and prior years but classified as nonmanufacturing in 1947. The effect of this revision was to reduce value added by manufacture and number of production workers by 1%.

each major industry group, classified according to three employment size classes.

Discontinuation of Publication of Cost of Materials and Value of Products for Industry Groups and Some Individual Industries.—Duplication is present in the value of products totals for industry groups, whether for the United States, for states or for other geographic areas. Thus, when figures for flour mills are added to those for bakeries, the value of flour mill production is counted twice. The amount of this duplication varies from one grouping to another and is always difficult and, in some cases, impossible to measure. The same kind of duplication exists in the cost of materials figures. In the 1947 census all value of products and cost of materials totals which contain a substantial amount of duplication were withheld from publication; that is, value of products and cost of materials statistics were published for the large majority of individual industries, but not for a few important industries such as steelworks and motor vehicles, where establishments classified in one of these industries make products which are used as materials by other establishments also classified in the same industry. For the same reason these measures were not published for the United States as a whole, for industry groups or for geographic areas.

Statistical Findings.—The 1947 census of manufactures statistics, compared with those for 1939, measure the tremendous changes that took place in manufacturing over this period of U.S. industry.

For the United States as a whole value added by manufacture increased approximately 205%, from $24,000,000,000 in 1939 to $74,000,000,000 in 1947. Average employment of production workers increased more than 50% over 1939, from 7,800,000 to 11,900,000. Wages paid to production workers increased 235%, from $9,000,000,000 to $30,000,000,000. The number of factories counted in the 1947 census approximated 241,000, as compared with the 174,000 in the preceding census year.

In 1947 the ten most important states in terms of value added by manufacture were ranked as follows: New York, Pennsylvania, Illinois, Ohio, Michigan, New Jersey, California, Massachusetts, Indiana and Wisconsin. This ranking differed from that for 1939 only in that over the period California advanced ahead of Massachusetts, rising from eighth to seventh among the states, and Wisconsin displaced Connecticut from tenth place.

Among the major industry groups the machinery industries (electrical and nonelectrical) showed the greatest per-cent increase. For these industries, value added increased approximately 295%, production-worker employment by 140%, with electrical machinery showing somewhat greater increases in both measures. Value added by manufacture in the transportation equipment industries increased about 230%; production-worker employment by 80%. Substantially greater-than-average increases in both measures were also reported for fabricated metals (250% and 80%, respectively); instruments (225% and 115%); and rubber products (220% and 80%). In the lumber, furniture and paper industries the increase in value added averaged about 230%, substantially greater than the average for all industries, though the 45% increase in employment was somewhat lower than the national average. Even more striking was the 220% increase in value added in the apparel industries as compared with an increase of only about 30% in employment. Comparatively small increases in both value added and employment were reported in foods, tobacco products, leather products and the printing and publishing groups of industries. The per-cent increase in value added for these industry groups ranged from 83 to 163, employment from 7% to 37%.

Table XIV.—*Principal Statistics for Major Industry Groups*

Major Industry Group	Value added by manufacture 1947	Total employees, 1947		Number of production workers (average for the year)	
		Number (average for the year)	Salaries and wages	1947	1939
	(millions)	(thousands)	(millions)	(thousands)	(thousands)
All industries, total	$74,426	14,294	$39,690	11,916	7,808
Food and kindred products	9,025	1,442	3,789	1,099	802
Tobacco manufactures	641	112	206	103	87
Textile-mill products	5,341	1,233	2,836	1,147	1,082
Apparel and related products	4,443	1,082	2,527	973	753
Lumber and products	2,497	636	1,338	596	423
Furniture and fixtures	1,378	322	824	283	189
Paper and allied products	2,875	450	1,281	389	270
Printing and publishing	4,269	716	2,277	438	324
Chemicals and allied products	5,365	632	1,910	466	276
Petroleum and coal products	2,015	212	739	170	108
Rubber products	1,303	259	783	215	121
Leather and leather products	1,533	383	874	349	327
Stone, clay and glass	2,307	462	1,211	406	267
Primary metal industries	5,766	1,157	3,595	1,010	672
Fabricated metal products	4,922	972	2,833	822	451
Machinery (except electrical)	7,813	1,545	4,805	1,244	536
Electrical machinery	3,894	801	2,271	639	248
Transportation equipment	5,869	1,182	3,720	987	545
Instruments	1,080	232	665	182	85
Miscellaneous products	2,090	464	1,206	398	242

Table XV.—*Principal Statistics for States*

State	Value added by manufacture 1947 (millions)	Total employees 1947		Number of production workers (average for the year)	
		Number (average for the year) (thousands)	Salaries and wages, total (millions)	1947 (thousands)	1939 (thousands)
United States	$74,426	14,294	$39,690	11,916	7,808
Alabama	877	206	445	186	116
Arizona	104	14	39	11	6
Arkansas	265	65	124	58	36
California	3,995	664	2,065	530	271
Colorado	287	54	144	44	23
Connecticut	1,897	400	1,149	332	233
Delaware	182	34	92	29	20
District of Columbia	99	18	56	10	8
Florida	350	79	169	66	51
Georgia	1,016	250	484	226	156
Idaho	110	17	46	15	10
Illinois	6,680	1,185	3,585	954	591
Indiana	2,978	548	1,588	458	275
Iowa	671	140	372	113	65
Kansas	461	75	205	59	31
Kentucky	741	130	305	111	63
Louisiana	694	132	310	112	70
Maine	432	100	234	90	74
Maryland	1,138	229	612	189	141
Massachusetts	3,370	718	1,923	602	458
Michigan	5,196	974	3,091	822	520
Minnesota	1,023	180	501	145	78
Mississippi	300	77	138	70	46
Missouri	1,623	327	827	270	176
Montana	92	16	43	14	9
Nebraska	261	47	120	37	18
Nevada	28	2	8	2	1
New Hampshire	307	75	177	66	55
New Jersey	4,177	738	2,214	602	432
New Mexico	55	8	18	6	3
New York	9,667	1,776	5,280	1,425	949
North Carolina	1,647	382	759	350	269
North Dakota	29	5	12	4	3
Ohio	6,359	1,195	3,560	988	596
Oklahoma	341	55	144	44	28
Oregon	675	106	318	92	58
Pennsylvania	6,947	1,440	3,919	1,219	853
Rhode Island	658	147	375	128	106
South Carolina	794	188	377	176	126
South Dakota	51	10	26	8	5
Tennessee	958	221	473	192	131
Texas	1,727	297	755	242	125
Utah	128	25	64	20	12
Vermont	150	35	83	30	21
Virginia	1,052	217	484	190	132
Washington	874	144	438	123	82
West Virginia	664	127	338	109	74
Wisconsin	2,261	416	1,184	343	199
Wyoming	35	6	17	4	3

California led these states in rate of growth, with a 256% increase in value added by manufacture and a 96% increase in production-worker employment. Wisconsin was second with a 230% increase in value added and a 70% increase in employment. The smallest per-cent increases in both value added and employment were shown by the New England and Middle Atlantic states, generally.

The geographic concentration of industrial activity is strikingly shown by figures for the 127 counties with 20,000 or more manufacturing employees in 1947. Together they accounted for 65% of production workers in the United States and 69% of the value added in 1947, as compared with 65% and 71%, respectively, in 1939. These counties included only 42% of the population of the United States in 1940 and occupied only 2.6% of the land area.

There was a large concentration of production in a relatively few establishments. Thus, 29% of the 241,000 establishments covered in the census had less than five employees, but these establishments accounted for only 1.1% of the employment and 1.2% of the value added by manufacture. Similarly, almost half of the establishments had less than ten employees, but these establishments accounted for only 3.3% of the employment and 3.2% of the value added by manufacture. On the other hand, the approximately 2,000 establishments with 1,000 or more employees, less than 1% of the total number, accounted for approximately one-third of the employment and value added by manufacture. These figures stress the fact that for most purposes an establishment count is of little significance in manufacturing industries without a measure of the size of the establishments included. (Ju. Sn.; M. R. C.)

Centennials: *see* Calendar, 1950, page xxxii.
Cereals: *see* Barley; Corn; Oats; Rice; Rye; Wheat.

Ceylon, Dominion of.

A self-governing member of the British Commonwealth of Nations, lying off the southern extremity of India and approaching to within 6° of the equator, Ceylon has an area of 25,332 sq.mi. Pop.: (March 19, 1946 census) 6,693,945, (mid-1948 est.) 7,177,000 (including Maldive Islands). Languages: mainly Sinhalese (69%) and Tamil (21%). Religions: Buddhist (61%); Hindu (22%); Moslem (9%); and Christian, mainly Roman Catholic (7%). Chief towns (1946 census): Colombo (cap., 362,000); Jaffna (63,000); Dehiwala-Mount Lavinia (56,000); Kandy (52,000). Governor general (1949): Sir Henry Monck-Mason Moore and, from July 6, Lord Soulbury; prime minister and minister of defense: Don Stephan Senanayake.

History.—Feb. 4, 1949, marked the first anniversary of Ceylon's independence. Internationally Ceylon was set back by the soviet veto of its claim to membership of the United Nations. Its government on Dec. 22, 1948, announced its refusal of harbour or airport facilities to Dutch ships or aircraft carrying troops or war materials to Indonesia; the ban was lifted on July 19. Early in the year Minister of External Affairs S. W. R. D. Bandaranaike, on a visit to New Delhi, suggested that India, Pakistan, Burma and Malaya should make regional arrangements for mutual defense under the United Nations charter. In April D. S. Senanayake attended a meeting of commonwealth prime ministers in London. On his return he revealed that the British government agreed to help in the organization of Ceylon's defense forces. Lord Soulbury assumed the governor-generalship on July 6 in succession to Sir Henry Monck-Mason Moore.

Ceylon kept in step with India in devaluing its rupee so as to maintain the sterling parity of 1*s*. 6*d*. (After Sept. 20 the value of the rupee in U.S. currency was 20.85 cents.) The relationship between the Ceylon and the Indian rupee, however, was severed by the parliament at Colombo on Sept. 20. A new agreement was made between the British government and the government of Ceylon on the use of Ceylon's sterling balances for a further year to June 30, 1950. The agreement sanctioned the release of sterling to the extent of £7,000,000 and at the same time Ceylon was able to retain, from its surplus dollar earnings, an independent reserve to be held by the Reserve Bank of Ceylon when created. In order to control Ceylon's foreign expenditure and increase home production, a cabinet committee was appointed on Aug. 22 to draw up a program to keep imports within available exchange resources and implement the decisions to save dollars taken at the conference of commonwealth finance ministers in London.

The budget presented on July 14 provided for reduced customs duties on a wide variety of articles and reduced income tax in the lower group of incomes. The minister of finance, J. R. Jayawardene, forecast an adverse balance of Rs. 190,000,000 (£14,250,000) and consequently measures of control to reduce the gap. A local loan of Rs. 400,000,000 was to be raised; but considerable foreign capital would be required for productive development. There was no intention of placing restrictions on the withdrawal of foreign capital investments; and profits earned by such investments could be remitted to the country of origin.

The contract for the construction of an irrigation project in the Galoya area designed to irrigate about 100,000 ac. of land in the eastern province was given to a U.S. firm by the government.

During the year Ceylon expanded its diplomatic relations with neighbouring countries, particularly Burma with which an interchange of ambassadors took place in acknowledgment of the close religious ties existing between the two countries as staunch adherents of Buddhism. Ceylon established relationships also with India, Pakistan and Japan.

After an interval of 11 yr., pearl fishing was resumed in Tambelegam bay, Trincomalee. A sugar expert was lent to the government of Ceylon by the government of India to advise on the proposed establishment of a sugar factory at Galoya, where about 36,000 ac. had been earmarked to grow sugar cane. An ilmenite factory was to be set up at Pulmoddai, 40 mi. N. of Trincomalee, at a site said to be one of the best in the world for ilmenite sands.

Work was begun on the restoration of the historic 2,000-yr.-old stupa, built on the spot from which Buddha is said to have preached on his visit to Ceylon 2,500 yr. ago. A new protective shelter for the colossal image of the Buddha at Avukana, among the finest of its kind in Asia, was to be provided by the archaeological department. (E. Hd.)

Education.—(1947) Schools: government and assisted 5,436, pupils 843,037; English 461, pupils 182,872; industrial 666. Institutions of higher education 2, students 2,969. Illiteracy (1948) 35%.

Finance and Banking.—Budget (1948–49 est.): revenue Rs. 565,000,000; expenditure Rs. 532,600,000; (1949–50 est.): revenue Rs. 563,700,000; expenditure Rs. 563,500,000. National debt (Sept. 30, 1947) Rs. 469,000,000. Note circulation (July 1949): gross Rs. 301,500,000, active Rs. 220,200,000; (July 1948): gross Rs. 376,200,000, active Rs. 217,600,000. Bank deposits (June 1949) Rs. 581,200,000; (June 1948) Rs. 612,100,000. Monetary unit: rupee with an exchange rate of 20.85 cents U.S. in Nov. 1949.

Trade and Communication.—Imports (1948) Rs. 994,000,000. Exports (1948) Rs. 1,011,000,000. Roads (1948): 10,242 mi. Licensed motor vehicles (Dec. 1948): cars 27,594; commercial vehicles 11,887. Railways (1948): 912 mi.; freight tons carried 1,270,800. Air transport (1948): passenger-mi. 2,670,000; cargo, including mail, net ton-mi. 12,130. Radio receiving set licences (1948) 24,616.

Agriculture.—Main crops (metric tons, 1948): tea 136,000; rubber 96,000; rice 251,000. Fresh coconuts (exports, 1948) 9,387,000. Livestock (1946–47): cattle 1,116,000; sheep 55,000; pigs 85,000; goats 326,000; buffaloes 624,000. Fisheries: total catch (1946) 22,000 tons.

Industry.—Chief mineral product is graphite; exports (1948) 14,000,000 metric tons. Salt production amounts to about 30,000 tons a year.

Chambers of Commerce.

United States.—At the end of 1948, member organizations of the Chambers of Commerce of the United States totalled 3,088, with an underlying membership of 1,328,260 businessmen. In addition, the chamber had more than 19,000 firms and individuals on its rolls as business members.

During 1949, the chamber's activities were grouped, in part, under the following departments: agriculture; commercial organizations; construction and civic development; domestic distribution; economic research; education; employer-employee relations; finance; foreign commerce; governmental affairs; insurance; manufacture; natural resources; social security; and transportation and communication.

Policies and action were directed to all phases of the national economy: better labour-management relations; closer understanding between farmer and businessman; more practical city planning; dissipation of housing bottlenecks; husbanding of natural resources; furtherance of foreign trade and economic co-operation; improvement of transportation and communications; curtailment of public expenditures; and expansion of private investment and development.

The chamber's drive against Communist infiltration continued. The chamber's American Opportunity program to promote the U.S. system of free enterprise was also expanded to broaden the dissemination of factual data on the benefits of the system.

"Let Freedom Ring," a network radio program, was continued as an inspiration to individual responsibility at grassroot levels for a better and more secure America.

The challenge of the 1949 annual meeting was expressed in a general sessions theme: "Dare We Face Freedom?" The member response was epitomized in a postmeeting message to the membership by the chamber's Executive Vice-President Bradford which included the following:

"Freedom is not 'benefits.' Freedom is not special privilege, whether for businessmen, for farmers, for laborers, or for anybody. Government hand-outs are not the answer. Freedom is not what we get, but what we give. Freedom is sacrifice!"

At its 37th annual meeting in May 1949, the chamber's board of directors elected Herman W. Steinkraus as president for the ensuing 12 months. Ralph Bradford was executive vice-president, and Arch N. Booth, chamber manager. Headquarters were at 1615 H St. N.W., Washington, D.C. (H. W. St.)

Junior Chambers of Commerce.—With organizations in more than 1,800 communities in the United States, Alaska and Hawaii, this is the largest young men's civic group in the world. The 200,000 members are concerned with improving the communities in which they live. They emphasize leadership training and the preservation of the free, competitive enterprise system. The organization is affiliated with Junior Chamber International, which is composed of similar groups in 44 nations.

The 29th annual convention was held in Colorado Springs, Colo., where Clifford D. Cooper, 33-year-old Alhambra, Calif., industrialist, was elected president. The U.S. Junior Chamber of Commerce voted to support the Hoover commission recommendations for reorganization of the executive branch of the government, adopting this as its number one external program.

An annual program to select the ten outstanding young men of the year was conducted by the organization and its national magazine, *Future*. As the year ended, plans were made to honour these men at a banquet in Peoria, Ill., on the 30th anniversary of the founding of the organization in St. Louis, Mo., on Jan. 21, 1920.

Construction was started on a memorial building in Tulsa, Okla., which would house the offices of the national and international junior chambers of commerce. The building design was selected from more than 200 entries submitted by young architects from all over the world. Headquarters in 1949 were in the Akdar building, Tulsa, Okla. (W. D. Me.)

Canada.—Active membership campaigning put the Canadian chamber of commerce into 640 cities, towns and villages by Oct. 1949, with a total individual membership of more than 100,000, both an all-time high for the 21-year-old organization. During the year emphasis was laid on employer-employee relations in an effort to publicize the advantages of the free enterprise system. About 200 member chambers had national affairs committees to study pressing national problems. Under the sponsorship of the chamber's Foreign Trade committee, a special delegation went to England to set up an Anglo-Canadian Trade committee. There were 20 resolutions of policy passed at the chamber's annual meeting, which were later presented to the federal government.

The junior chamber of commerce membership increased to 225 (145 in 1948) through a formal union of the English and French junior chambers, giving a total individual membership of 20,000. At the June 1949 annual meeting special youth development and forestry committees were added to the active committees on international relations, agriculture, national affairs, leadership training, tourist development, public relations and civic beautification. (C. Cy.)

Great Britain.—The vital problem of balancing the external trade account of the United Kingdom, and of closing its dollar deficit in particular, caused considerable attention to be given by chambers of commerce to export trade problems in 1949. The Association of British Chambers of Commerce and its constituent chambers assisted in meeting the problems of overseas trade; in so doing they dealt with subjects involving national policy; *e.g.*, the liberalization of intra-European trade, the European Recovery program and the international tariff negotiations conducted at Annecy, France, as well as with the difficulties of individual exporters and would-be exporters. The problem of trade with North America gave birth to two new organizations of businessmen, in both of which the Association of British Chambers of Commerce played a leading part. Discussions with the Canadian Chamber of Commerce led to the formation of the United Kingdom-Canada Trade committee. This body, sponsored by the Canadian chamber and by the A.B.C.C., Federation of British Industries, National Union of Manufacturers and National Farmers' union, arranged to meet twice each year to review trade problems at the business level, concerning itself with United Kingdom imports from Canada as well as exports to that dominion. The second new body, the Dollar Exports board, was formed in May; the problem of increasing sales to dollar markets represented its broad terms of reference.

During 1949 the A.B.C.C. again advised the board of trade on the problem of frustrated exports. By the end of the year advice had been given on more than 4,000 applications, mostly concerning textiles.

The association considered that the chamber of commerce organization ought to issue its views on Britain's economic position and policy. Its statement dealt with the salient features in national policy; *e.g.*, high government expenditure and taxation and the need for incentives, and was submitted to the government.

The association convened a conference of representatives from many blitzed cities and towns with reconstruction problems; this led to representations to the government on several important points. The association and its 100 chambers examined carefully all new parliamentary bills and took steps to secure desirable changes. The Iron and Steel bill received meticulous examination from the point of view of manufacturers using steel. In this work the A.B.C.C. joined with the F.B.I. and the N.U.M.

The membership of chambers of commerce affiliated to the A.B.C.C. rose appreciably. Membership of home chambers passed the 60,000 mark and that of affiliated chambers in foreign countries exceeded 8,000. These figures were the highest recorded. (A. R. K.)

International.—The International Chamber of Commerce held its biennial congress, attended by more than 500 delegates, in June 1949 in Quebec, Can. The Quebec congress reviewed work done during the preceding two years by national committees working in conjunction with working committees of the chamber. Among the subjects to which the chamber had given special attention was the formation of a code of fair treatment for foreign investments. The problem of foreign investments received special attention after World War II and early in 1949 was emphasized in President Truman's Point Four program, which was to encourage the investment of U.S. capital in other countries. On the basis that the first essential for the encouragement of foreign investments was to build assurances for security, for the unrestricted repatriation of dividends, for reasonable scope for development of the project and for the ultimate return of the capital in the currency of the lender, the international chamber's code of fair treatment was drawn up, and received much attention in the United Nations Economic and Social council and in the treasuries of leading governments.

A part of the chamber's activity which attracted much attention was its work for the removal of barriers to trade and travel. Special study was given to this subject, which had great, though indirect, influence on the development of foreign trade. (C. G. Fr.)

Channel Islands: *see* British Empire; Great Britain & Northern Ireland, United Kingdom of.

Chapman, Oscar Littleton (1896–), U.S. secretary of the interior, was born Oct. 22 in Omega, Va., and graduated from Randolph-Macon academy in Bedford, Va. He served in the navy in World War I and studied at the University of Denver, Denver, Colo., University of New Mexico, Albuquerque, and at Westminster Law school, Denver, where he received a law degree in 1929. He was chairman of the Colorado state Child Welfare committee, and later president of the Colorado state board of control. In May 1933 he was appointed assistant secretary of the interior. He was a member of Pres. F. D. Roosevelt's so-called "little cabinet," and for a dozen years supervised at one time or another virtually all the interior department activities. Chapman managed the Roosevelt-Wallace campaign in 1940, and served as western campaign manager for the Roosevelt-Truman ticket in 1944. In 1948 he travelled 26,000 mi. as advance agent for Pres. Harry S. Truman on the latter's pre-election tour of the U.S. When Sec. Julius A. Krug resigned Nov. 11, effective Dec. 1, 1949, Chapman was appointed to succeed him, and was sworn into office Dec. 1.

Charge Account: *see* Consumer Credit.
Charles Hayden Foundation: *see* Societies and Associations.
Cheese: *see* Dairy Products.

Chemistry. **Names of Elements.**—The International Union of Pure and Applied Chemistry, at its meeting in Amsterdam, Neth., in Sept. 1949, recommended these names of elements.

Name	Symbol	Atomic Number
Beryllium	Be	4
Niobium	Nb	41
Technetium	Tc	43
Promethium	Pm	61
Lutetium	Lu	71
Hafnium	Hf	72
Wolfram	W	74
Astatine	At	85
Francium	Fr	87
Protactinium	Pa	91
Neptunium	Np	93
Plutonium	Pu	94
Americum	Am	95
Curium	Cm	96

Astatine is the halogen beyond iodine, francium the alkali metal beyond caesium, and promethium is the element in the group of rare earths which was originally called illinium. The recommendation of niobium to replace columbium and wolfram to replace tungsten represented the widest divergence from American usage, although the symbol W for tungsten had always been used.

Uranium.—During 1949, work by Kurt Kraus, Frederick Nelson and Gordon Johnson, of Oak Ridge National laboratory, Tenn., dealt with the chemistry of pentavalent uranium (or uranium [V]) solutions. I. M. Kolthoff showed in 1945 that solutions of ordinary uranium (VI) compounds could be reduced to uranium (V) at the dropping mercury electrode but he regarded the latter as a transient species which rapidly underwent disproportionation into the +4 and +6 oxidation states.

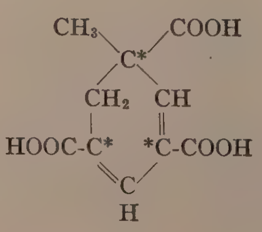
The Oak Ridge investigators found that solutions of uranium (V) compounds could be preserved without appreciable decomposition for considerable periods of time if maintained in the optimum stability range between pH 2 to 4 (mild acidic conditions). Electrolytic reduction of uranium (VI) solutions was one method of obtaining uranium (V): $UO_2^{++}+e^{-}\rightarrow UO_2^{+}$. Chemical reducing agents were successful also. Zinc amalgam, for example, was found to effect a rapid conversion of dilute uranyl chloride solution (UO_2Cl_2) into uranium (V), or UO_2Cl, in better than 50% yield. It was noted that with all methods of preparation, solutions of uranium (V) were frequently prepared which resisted disproportionation (into U[VI]+U[IV]) for a long time, then suddenly began to disproportionate rapidly. No conditions were found for the direct oxidation from the tetra- to the pentavalent state. Oxidation of the penta- to the hexavalent state, however, occurred readily with a number of oxidizing agents, including atmospheric oxygen, ferric salts and ceric salts.

Instead of giving rise to uranium (V) on hydrolysis, uranium pentachloride initially yielded the IV and VI oxidation states; but at an acidity near pH 2 uranium (IV) and uranium (VI) reacted rapidly to yield appreciable concentrations of uranium (V).

Radioactive Carbon Compounds.—Ordinary carbon is of atomic weight 12. Of the two isotopes C^{13} and C^{14}, the latter is radioactive. Its availability in recent years stimulated studies on the preparation of organic compounds containing it because tracer techniques enable one to follow the fate of radioactive compounds in chemical or metabolic processes.

In reporting a few syntheses involving radioactive carbon, radioactive barium carbonate, $BaC^{14}O_3$, is a convenient starting compound. Richard Abrams of the University of Chicago, developed a method of converting it into hydrogen cyanide, $HC^{14}N$. The carbonate was mixed with lead chloride, from which carbon dioxide, $C^{14}O_2$, was readily liberated by direct heating, since the intermediate lead carbonate, $PbC^{14}O_3$, decomposes at the low temperature of 315°C. The carbon dioxide was reduced to carbon (C^{14}) by reaction with red-hot magnesium powder. After separation of magnesium compounds by means of hydrochloric acid, the carbon was then heated to 1,000°C. in a quartz tube in a stream of ammonia gas, thereby producing radioactive hydrogen cyanide, which was collected in alkaline solution.

Toluene, with C^{14} atoms in positions 1,3,5 of the benzene



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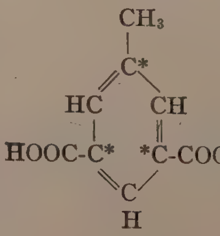

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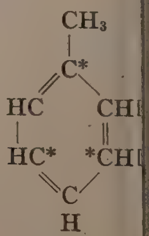
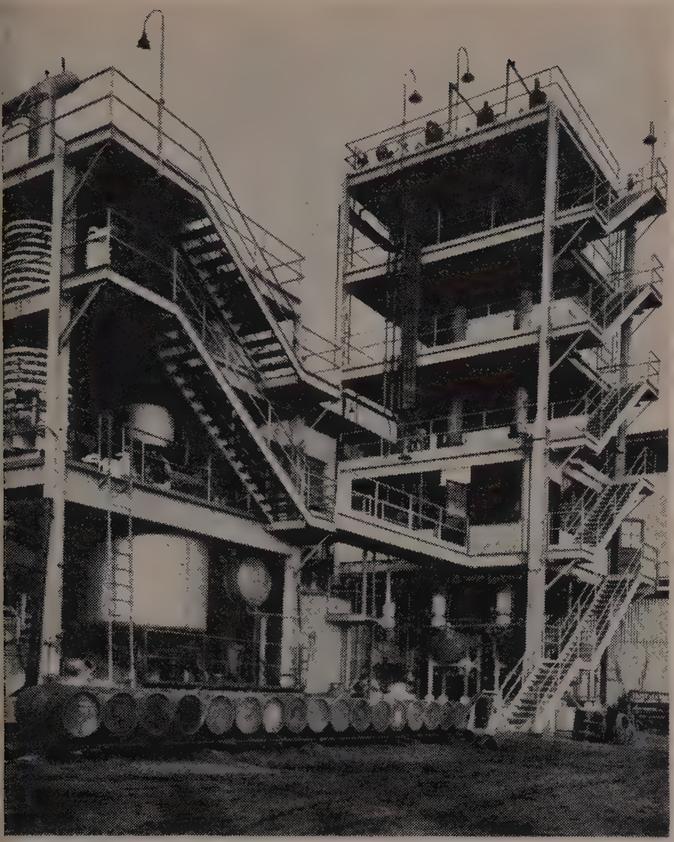


III



FIRST U.S. PILOT PLANT for the utilization of acetylene at high pressures opened by the General Aniline & Film Corp., at Grasselli, N.J., in March 1949

ring (*i.e.*, toluene-1,3,5-C_3^{14}), was synthesized in 62% yield by Dorothy Hughes and James Reid of the University of California, Berkeley, starting with radioactive pyruvic acid, $CH_3C^{14}OCOOH$, which was available. This acid was condensed, in the presence of alkali, to the tricarboxylic acid (I), and it in turn was dehydrogenated to toluenetricarboxylic acid (uvitic acid), II, by hot sulphuric acid. Decarboxylation of II into the radioactive toluene (III) was accomplished by heating with copper oxide in the presence of quinoline. In formulas I–III C^{14} atoms are designated with asterisks.

Radioactive carbon has a half-life of 5,673 to 5,767 years and by measuring the disintegrations per minute per gram (the specific activity) of carbon obtained from very old samples of wood, W. F. Libby and co-workers of the University of Chicago showed that the method was capable of establishing the age of such samples. Libby experimented with redwood whose tree rings dated it at 1031 to 928 B.C. and with wood from the tomb of Zoser at Sakkara, Egypt, which was of the age 2575–2725 B.C. The observed specific activities of the carbon obtained from these and other samples of wood of known age were remarkably close to the values obtained from the half-life curve for radioactive carbon.

Cracking Catalysts.—Catalytic cracking of petroleum hydrocarbons had assumed major industrial importance in recent years. Charles L. Thomas of Universal Oil Products company, Chicago, presented the existing knowledge regarding this process, especially as regards silica-alumina catalysts.

Silica alone is either inactive or only faintly catalytic. Alumina by itself is better than silica but is a poor cracking catalyst. The proper combination of silica and alumina gives rise to a superior cracking catalyst, but to make such a catalyst, it is necessary to start with the hydrogels or hydrous oxides of both silica and alumina. Mixtures of the anhydrous oxides are not catalytic nor are mixtures of one anhydrous oxide with one hydrous oxide. The silica-alumina catalyst apparently has certain acidic properties, and Thomas believed that it was this acidity that was responsible in large measure for the effective catalytic activity.

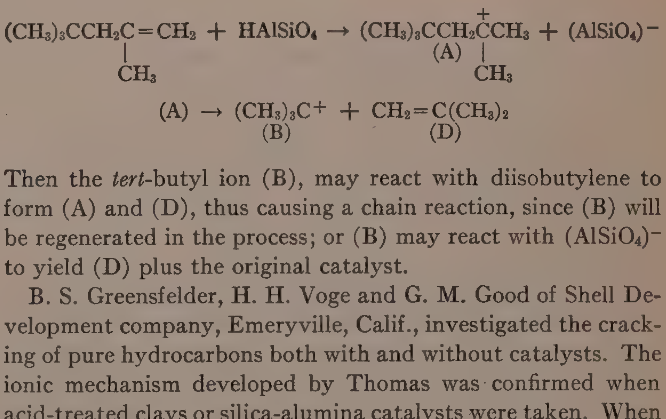
To assure the absence of inorganic materials other than silicon and aluminum, Thomas used ethyl orthosilicate and aluminum isopropoxide as sources of silica and alumina, respectively. Mixtures of these two substances in varying ratios were hydrolyzed by use of distilled water and alcohol. Acidity of the silica-alumina catalyst was determined by leaching it with an excess of dilute potassium hydroxide solution for one half-hour, then back-titrating the unused hydroxide with hydrochloric acid to a phenolphthalein end point. The maximum acidity was found for catalysts wherein the ratio of aluminum to silicon was 1, but high acidities persisted at a ratio of 2.

The maximum catalytic activity, as determined by passing Pennsylvania gas oil over the catalyst at 500°C. to obtain both gas and gasoline, was also at an Al to Si ratio of 1:2, but closer to 2. This proved that catalyst activity, acidity and composition were related in the silica-alumina catalysts, especially since they were prepared in such a way as to exclude the use of mineral acids.

It was suggested that the active constituent of this catalyst is $(HAlSiO_4)_x$. Since maximum activity was obtained at an Al:Si ratio of 2 whereas maximum acidity was reached at a ratio of 1, Thomas suggested that the catalyst mass behaved as if it were made up of an active part having an Al:Si ratio of 1 plus an inert silica support.

Silica-magnesia, silica-zirconia, alumina-boria and titania-boria catalysts were considered from the same viewpoint with the conclusions that $(H_2MgSiO_4)_x$, $(H_4ZrSi_2O_8)_x$, $(H_3AlB_2O_6)_x$ and $(H_2TiB_2O_6)$ should represent the formulas, respectively, for the catalytic parts of these combinations.

To illustrate the mechanism of catalytic cracking, one set of equations will be presented making use of diisobutylene and the silica-alumina catalyst.



$$(CH_3)_3CCH_2\underset{\underset{CH_3}{|}}{C}{=}CH_2 + HAlSiO_4 \rightarrow \underset{(A)}{(CH_3)_3CCH_2}\underset{\underset{CH_3}{|}}{\overset{+}{C}}CH_3 + (AlSiO_4)^-$$

$$(A) \rightarrow \underset{(B)}{(CH_3)_3C^+} + \underset{(D)}{CH_2{=}C(CH_3)_2}$$

Then the *tert*-butyl ion (B), may react with diisobutylene to form (A) and (D), thus causing a chain reaction, since (B) will be regenerated in the process; or (B) may react with $(AlSiO_4)^-$ to yield (D) plus the original catalyst.

B. S. Greensfelder, H. H. Voge and G. M. Good of Shell Development company, Emeryville, Calif., investigated the cracking of pure hydrocarbons both with and without catalysts. The ionic mechanism developed by Thomas was confirmed when acid-treated clays or silica-alumina catalysts were taken. When no catalysts were present, or when neutral substances were present, a free radical mechanism was called for to explain the results. Activated carbon, a nonacidic catalyst, gave a unique product distribution which was explained as a quenched free radical type of pyrolysis. Activated pure alumina, with only weakly acidic properties, was found to induce primary pyrolysis corresponding to the free radical mechanism and secondary cracking in conformity with an ionic mechanism.

Oxidation of Hydrocarbons.—Attention was given in 1949 also to the homogeneous, gas phase oxidation of lower hydrocarbons such as ethane, propane and isobutane by oxygen gas. This was the work of Frederick Rust, William Vaughn and others of Shell Development company. The reaction at 160°C.

was found to be greatly modified by the presence of hydrogen bromide. Ethane chiefly gave rise to acetic acid, propane to acetone, and isobutane or other branched alkanes to stable peroxides.

Oxygen was believed to react first with the hydrogen bromide present to liberate a bromine atom, which then reacted with the hydrocarbon to form a radical: $R_3CH + Br \rightarrow R_3C + HBr$. Oxygen then attached itself to the radical to form R_3COO-, and this in turn reacted with hydrogen bromide to form the peroxide and bromine atom which perpetuated the operation: $R_3COO- + HBr \rightarrow R_3COO-H + Br$. The peroxide radical combines simultaneously with the alkyl radical, R_3C, to yield the symmetrical alkyl peroxide, $R_3COO-CR_3$. The yields of organic peroxides in these experiments were high. Thus for every 100 moles of isobutane consumed, there were formed 14 moles of *t*-butyl hydrogen peroxide, 20 moles of di-*t*-butyl peroxide, and 31 moles of *t*-butyl alcohol. Between 64 and 73 moles of acetic acid were formed per 100 moles of ethane consumed in similar experiments with ethane conducted at 210–220°C.

Aldehydes.—Only one heterocyclic aldehyde, namely, furfural, has a convenient source. Methods to prepare other aldehydes were the objects of a continuing search, since from aldehydes a great variety of other compounds could be prepared.

Studies on the conversion of thiophene into its aldehyde, 2-thenoic aldehyde, were carried on by two groups, namely, W. J. King and F. F. Nord of Fordham university, New York city, and W. S. Emerson and T. M. Patrick, Jr., of Monsanto Chemical company, Dayton, O. It will be recalled that thiophene became available by way of the high temperature reaction of butane and sulphur. One approach to the aldehyde was the reaction of thiophene, N-methylformanilide and phosphorus oxychloride. In another method, thiophene was first converted into 2-thenyl chloride by reaction with formaldehyde and hydrogen chloride. Hydrolysis to thenyl alcohol and oxidation with chromic acid at ice temperature completed the synthesis. The reactions of thenoic aldehyde greatly resemble those of benzaldehyde.

A related study was made by H. D. Hartough and J. J. Dickert, Jr., of Socony-Vacuum laboratories, Paulsboro, N. J., who used aminomethylation (with formaldehyde and ammonia) of thiophene as the approach to 2-thenoic aldehyde. The first substance formed is N-thenylformaldimine $(C_4H_3S)-CH_2-N=CH_2$, or its dimer. It tautomerizes and hydrolyzes under conditions of mild acidity giving rise to 2-thenoic aldehyde in high yield.

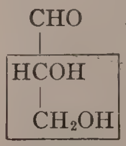
An investigation using 2-pyrrolecarbonal, the aldehyde related to pyrrole, was carried out by Werner Herz of the University of Illinois, Urbana. Herz condensed this aldehyde with hippuric acid and acetic anhydride. Instead of obtaining one product (an azlactone) as expected, Herz found two isomeric azlactones and offered evidence in support of the belief that they were geometric (cis-trans) isomers.

V. Deulofeu and A. E. A. Mitta of Buenos Aires, Arg., prepared 4-imidazolecarbonal by direct oxidation of imidazolylcarbinol, the latter being made from fructose in the presence of ammoniacal cupric acetate and formaldehyde. Perhaps the most interesting reaction studied by these investigators was the condensation with hydantoin leading, after hydrolysis, to histidine, one of the essential amino acids in nutrition, formed on hydrolysis of proteins.

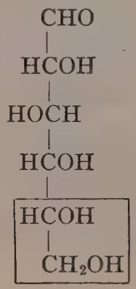
An ingenious synthesis of cyclopentenecarbonal was reported by James English, Jr., and G. W. Barber of Yale university. Catechol (or homologs of catechol) was hydrogenated to 1,2-cyclohexanediol. Being a glycol, the latter was cleaved by lead tetraacetate to yield adipaldehyde. The best conditions found for the self-condensation of this dialdehyde were heating at 110°C. with water in a sealed tube for five hours. A 60% yield of 1-cyclopentenecarbonal was obtained.

Stereochemistry.—Most naturally occurring carbohydrates and alpha amino acids are capable of turning the plane of polarized light when such light is passed through a solution of the substance. This is caused by the presence of one or more asymmetric atoms in the molecule. A carbon atom is asymmetric if it holds four different atoms or groups. Obviously, if one of the four groups is fixed for reference, the other three groups are arranged either in clockwise or counterclockwise fashion. Both of these arrangements are realizable in practice. One of the isomers is called D and the other L.

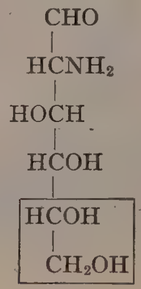
It was not a simple matter to relate the clockwiseness of different compounds but through the years precise information was accumulated regarding most of the carbohydrates. Thus in D-glycerose (IV), D-glucose (V), D-glucosamine (VI), all showing (+) rotation of polarized light, and D-fructose (VII),


$$\begin{array}{c} CHO \\ | \\ \boxed{\begin{array}{c} HCOH \\ | \\ CH_2OH \end{array}} \end{array}$$

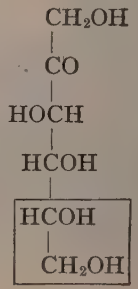
IV


$$\begin{array}{c} CHO \\ | \\ HCOH \\ | \\ HOCH \\ | \\ HCOH \\ | \\ \boxed{\begin{array}{c} HCOH \\ | \\ CH_2OH \end{array}} \end{array}$$

V


$$\begin{array}{c} CHO \\ | \\ HCNH_2 \\ | \\ HOCH \\ | \\ HCOH \\ | \\ \boxed{\begin{array}{c} HCOH \\ | \\ CH_2OH \end{array}} \end{array}$$

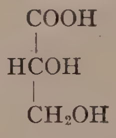
VI


$$\begin{array}{c} CH_2OH \\ | \\ CO \\ | \\ HOCH \\ | \\ HCOH \\ | \\ \boxed{\begin{array}{c} HCOH \\ | \\ CH_2OH \end{array}} \end{array}$$

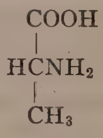
VII

of (—) rotation, the atoms set off in a rectangle all show the same clockwise arrangement of H to OH to CH_2OH (if viewed from below). The term D refers to this structural feature.

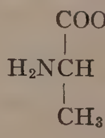
D-Glycerose is readily converted into D-glyceric acid of known structure (VIII). Natural (+)-rotatory alanine, being


$$\begin{array}{c} COOH \\ | \\ HCOH \\ | \\ CH_2OH \end{array}$$

VIII


$$\begin{array}{c} COOH \\ | \\ HCNH_2 \\ | \\ CH_3 \end{array}$$

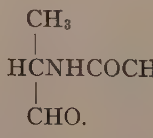
IX


$$\begin{array}{c} COOH \\ | \\ H_2NCH \\ | \\ CH_3 \end{array}$$

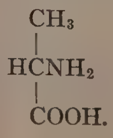
X

2-aminopropionic acid, could be either IX or X. M. L. Wolfrom, R. U. Lemieux and S. M. Olin of Ohio State university, Columbus, presented a series of reactions correlating the structures of the hydroxy acid (VIII) and the amino acid (X).

The starting point was natural D-glucosamine (VI), obtained from chitin (in oyster shells) by hydrolysis. The top CHO group was converted to CH_3 by mercaptalation, acetylation and reduction with Raney nickel. Then while the NH_2 group alone was acetylated (*i.e.*, $NHCOCH_3$), the bottom three carbons of the chain were cut off by means of lead tetraacetate. Thus, VI changed to

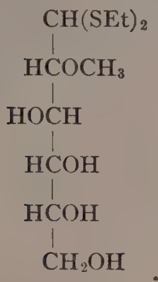

$$\begin{array}{c} CH_3 \\ | \\ HCNHCOCH_3 \\ | \\ CHO. \end{array}$$

Oxidation of the aldehyde group to carboxyl and hydrolysis of the acetyl group yielded an alanine of structure


$$\begin{array}{c} CH_3 \\ | \\ HCNH_2 \\ | \\ COOH. \end{array}$$

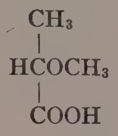
If this is turned through an angle of 180°, it is obvious that it is the same as X. The compound was (+) rotatory, the same as the L-alanine obtained from the hydrolysis of proteins.

Using a related experimental approach, the same authors started with the tetraacetate of 2-methyl-D-glucose diethyl mercaptal (XI), reduced the top CH(SEt)$_2$ with Raney nickel



$$\begin{array}{c} CH(SEt)_2 \\ | \\ HCOCH_3 \\ | \\ HOCH \\ | \\ HCOH \\ | \\ HCOH \\ | \\ CH_2OH \end{array}$$

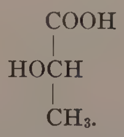
XI



$$\begin{array}{c} CH_3 \\ | \\ HCOCH_3 \\ | \\ COOH \end{array}$$

XII

to a CH$_3$ group, then removed the bottom three carbons with lead tetraacetate and oxidized the resulting aldehyde to acid, XII, which was the same compound as that produced by methylation of (+)–rotatory L-lactic acid,



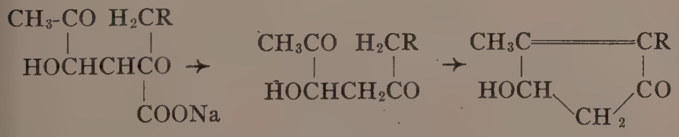
$$\begin{array}{c} COOH \\ | \\ HOCH \\ | \\ CH_3. \end{array}$$

It so happens that the configurations of both of these compounds (glucose and lactic acid) were already established, but this new chemical method provided an added confirmation.

Synthesis of a Pyrethrum Insecticide.—M. S. Schechter, N. Green and F. B. LaForge of the U.S. bureau of entomology and plant quarantine announced the successful synthesis of an active principle of pyrethrum. The natural source of this insecticide is the daisylike flower of pyrethrum (*Chrysanthemum cinerariaefolium*), mostly imported from Japan before 1940, but later chiefly from Kenya Colony and the Belgian Congo.

H. Staudinger and L. Ruzicka studied the active component pyrethrolone in 1924. Twenty years later LaForge and W. F. Barthel established the fact that this supposedly homogeneous material was a mixture of two related hydroxycyclopentenones. The name pyrethrolone was retained for the major component, and cinerolone was suggested as a name for the other. Pyrethrolone possesses a 2,4-pentadienyl side chain, and cinerolone has an analogous 2-butenyl group.

The 1949 contribution of Schechter *et al.* was the synthesis of cinerolone from pyruvic aldehyde, CH$_3$COCHO (A), and a beta keto salt, RCH$_2$COCH$_2$COONa (B), in such a way as to establish the structure as 4-hydroxy-3-methyl-2-β-butenyl-2-cyclopentenone. It had been assumed earlier that the hydroxy group was at position 5. This synthesis may be followed from A+B in these steps:



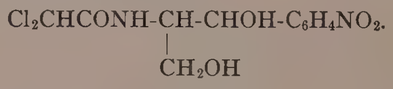
This condensation proceeds in the presence of sodium hydroxide, the group R being -CH$_2$CH=CHCH$_3$.

The toxicity of the synthetic compound proved to be equal to that of the natural product. Also, the knockdown action was the same. It was believed that the commercial synthesis of this material might be anticipated, in view of the availability of the starting materials, especially since the future of DDT for use on dairy cows was being questioned.

Chloromycetin.—This compound, also called chloramphenicol, was isolated in 1948 from a soil organism, *Streptomyces venezuelae*. It is an antibiotic which was shown to have a considerable spectrum of therapeutic activity against many pathogenic organisms.

Chemists at Parke, Davis and Company (Mildred Rebstock, Harry Crooks, Jr., John Controulis) were successful not only in elucidating many of its chemical properties but also in developing a method of synthesis.

The empirical formula of chloromycetin is $C_{11}H_{12}Cl_2N_2O_5$. It is relatively stable, neutral, optically active and melts at 150°C. It possesses a benzene ring, a nitro group, and an amide function. The nitro group is most unusual, since in no other known natural product does such a group occur. The complete structure proved to be

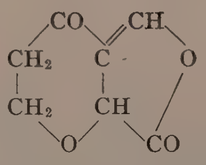


$$\begin{array}{l} Cl_2CHCONH\text{-}CH\text{-}CHOH\text{-}C_6H_4NO_2. \\ \qquad\qquad\quad | \\ \qquad\qquad\quad CH_2OH \end{array}$$

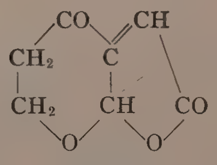
In conformity with this structure, the compound hydrolyzes to yield dichloroacetic acid and an amine, HOCH$_2$-CHNH$_2$-CHOH-C$_6$H$_4$NO$_2$. Periodic acid cleaves this amine (but not the original chloromycetin) to yield *p*-nitrobenzaldehyde, as would be predicted from the structure assigned.

To synthesize the compound, the investigators started with benzaldehyde and 2-nitro-1-ethanol. The nitro group of the 1-phenyl-2-nitro-1,3-propanediol, C$_6$H$_5$CHOH-CHNO$_2$-CH$_2$OH, thus produced, was hydrogenated to an amino group. By reaction with methyl dichloroacetate the amino group was converted to the desired amide. Then, after protecting the hydroxyl groups by acetylation, the benzene ring was nitrated. Deacetylation by mild alkaline conditions completed the synthesis. The compound was also synthesized differently, starting with *p*-nitroacetophenone.

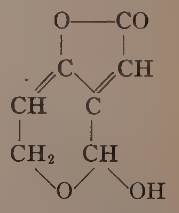
Patulin.—Patulin is a mould metabolite and antibiotic. Until recently, its structure was thought to be XIII. New evidence caused P. A. Plattner of Switzerland to reject this structure in favour of XIV. A still different structure, XV, however, was proposed by R. B. Woodward and G. Singh of Harvard university and by H. J. Dauben, Jr., and F. L. Weisenborn of the University of Washington, Seattle. Infra-red and ultraviolet spectra of patulin and its derivatives supported XV, as did the reaction of patulin with thionyl chloride. This is a reagent for the hydroxyl group, and the reaction did give rise to patulyl chloride wherein the OH group of XV was replaced by chlorine.



XIII



XIV

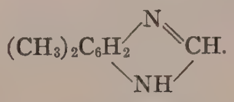


XV

Vitamin B$_{12}$.—The active principle in liver controlling pernicious anaemia was isolated in 1948 almost simultaneously by chemists working at Merck and Company in New Jersey and at Glaxo laboratories and the British Drug House, both in England. It is a red, crystalline compound of remarkably high physiological potency. The minimum effective daily dose was believed to be about one microgram, or one millionth of a gram. The usual single dose was 100 μg. In contrast, a dosage of 20,000 to 50,000 μg. of folic acid is required before it exhibits clinical activity.

A research team at Merck headed by Karl Folkers made considerable headway in elucidating the structure of this vitamin. A particularly unusual feature is the fact that the compound contains cobalt, 1 atom being present for every 60 or so carbon atoms. The empirical formula is given as $C_{61-64}H_{86-92}N_{14}O_{13}PCo$.

Degradation of vitamin B_{12} by acids yielded phosphoric acid and a fragment identified as 5,6-dimethylbenzimidazole,



$$(CH_3)_2C_6H_2\begin{matrix}\diagup N \diagdown \\ \diagdown NH \diagup\end{matrix}CH.$$

Polypeptide material is absent, since amino acids were not found as a result of the acid hydrolysis.

Arthritis Remedies.—Compound E or Cortisone, a steroid of known chemical structure separated from the adrenal cortex, and the adrenocorticotropic hormone known as ACTH, a complex protein isolated in tiny amounts from the pea-sized pituitary glands at the base of the brain of hogs, were major news items during 1949, limited clinical investigations indicating that they were helpful in the treatment of rheumatoid arthritis and rheumatic fever. The volume of publicity given seemed unfortunate, however, for three reasons: (1) the virtual unavailability of these materials; (2) the fact that unfavourable effects had also been noted in a number of reports, such as Cushing syndrome, paranoid mental conditions, congestive heart failure caused by serious water retention in patients with weak hearts, and increase in the amount of sugar in blood and excretions; (3) not all cases of arthritis responded to the treatments.

Cortisone was first isolated in 1936 by E. C. Kendall of Mayo clinic, Rochester, Minn., and was synthesized ten years later by L. H. Sarett of Merck and Company. Desoxycholic acid from ox bile was used originally in the synthesis, but the process held no immediate hope for large-scale production because of the large number of chemical reactions involved. During 1949 many groups of workers were engaged in the problem of a practical synthesis.

The ACTH picture was even less promising, since it requires 400,000 pig pituitaries to produce a pound of ACTH. Armour and Company led in this development. The chance of synthesis of ACTH seemed remote indeed, since this hormone is a protein.

Another chemical of a quite different nature, but spectacular also in the treatment of rheumatoid arthritis and rheumatic fever, was glucuronolactone. Synthesis of this derivative of glucose was developed by chemists at Corn Products Refining company and relatively large quantities of it were made. This represented a significant achievement, since the previous source of glucuronic acid or its lactone had been by processing urine of animals. (*See* also BIOCHEMISTRY; ELECTRONICS; PHYSICS; VITAMINS.)

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Chemotherapy.

Among the more startling reports on medical advancements in 1949 were announcements that Compound E (cortisone), from the adrenal gland, and ACTH, from the pituitary gland, produced dramatic relief in some instances for people with rheumatoid arthritis. These substances also showed promise in the experimental control of rheumatic fever, allergies and even cancer. Only small amounts of the drugs could be obtained, however, and they had to be rationed to certain clinics where proper studies could be undertaken. This situation was not unlike that of penicillin when it first became available, and streptomycin when it was first offered in wholly inadequate amounts. Some idea of the reason for the scarcity of ACTH could be obtained from the knowledge that pituitary glands from 400,000 hogs were required to make one pound of ACTH. This was such an expensive process that the drug at one time, if sold, would have cost approximately $4,500,000 a pound. Until the end of 1949 only 60 lb. had been produced in one year by one manufacturer. It seemed unlikely that unlimited quantities would be available for a long time; newer methods of production and synthetic substitutes were needed to provide a solution to the problem.

DR. B. M. DUGGAR, discoverer of aureomycin, shown in the Lederle laboratories at Pearl River, N.Y. In 1949 it was announced that aureomycin, already known to be effective against a host of diseases, also brought apparent relief to patients with whooping cough

The drugs cannot be used carelessly. Undesirable reactions, for example mental changes, were produced at times even when the drug was carefully administered. Other unwanted effects included the development of growth of hair and masculine features in women who were being treated.

Another new "cure" was widely promoted for the common cold. This treatment consisted of the administration of antihistaminic substances—chemical compounds used for the control of certain allergic phenomena. While certain research findings offered sufficient promise to justify further trial of these drugs, the Council on Pharmacy and Chemistry of the American Medical association, in view of the flamboyant wave of advertising that followed the announcement of these reports, issued a warning against expecting too much from the use of the substances and against the harmful possibilities that could follow their use. The council warned that instances had been reported of users of these drugs becoming drowsy and even falling asleep while at work and, in occasional cases, while driving cars or operating machinery. The council also warned that experience with these substances so far was insufficient to permit knowledge of whether they are harmless when used over long periods of time, and that the amounts taken in persistent colds might exceed what had been established as normally safe.

A chemical related to the antihistaminics was dramamine, hich when tried as an antihistaminic for allergy was found to ave far more therapeutic effectiveness when administered for notion sickness. After extensive trials, particularly on the U.S. rmy transport "General C. C. Ballou" in Nov. and Dec. 1948, ramamine was shown to be effective for the control, in the maority of instances, of motion sickness on boats, in aircraft and n cars. Subsequent investigations during 1949 also revealed romise for the use of this drug in irradiation sickness, migraine eadaches and nausea and vomiting in prospective mothers.

The usefulness of chloramphenicol (chloromycetin) for virus, ickettsial and other diseases was extended. Of importance, howver, was its synthesis, which did not result in the development f a cheaper commercial method of production, but did conribute to the knowledge necessary for the synthetic developnent of antibiotics. Another antibiotic, aureomycin, was reorted effective against several diseases such as amoebic dysenery, shingles, whooping cough and, particularly, undulant fever.

The drug treatment of tuberculosis was advanced by further tudies on para-aminosalicylic acid (PAS) and a new chemical rom Germany known as tibione. Experimentally, a mould deived from hops was also shown to be active against typical erms in mice but, unfortunately, caused damage to the kidneys.

The results of an extensive survey by the Therapeutic Trials ommittee of the Council on Pharmacy and Chemistry revealed hat hormones in some instances may be used for the palliative reatment of patients with cancer, but these substances could ot be regarded as cures. In some patients cancer progresses so ar before it is detected that operation or irradiation with raium or X-rays is impractical. In such instances, administration f hormones, androgens or estrogens (the so-called male and emale sex hormones) resulted in prolonging the lives of many f the patients treated and lessening pain. Sooner or later, howver, the patients died; a drug cure for cancer still did not exist.

Of related interest were further explorations on aminopterin or lymphatic leukemia, urethane for myeloid leukemia and itrogen mustard for monocytic leukemia. These drugs also ailed as cures, but on the other hand when given to carefully elected patients they did effect relief from symptoms and ause general improvement.

Antabuse (tetraethylthiuram disulphide) was reported to be n aid in the treatment of alcoholics. This chemical, long used n the rubber industry, produces intense vomiting when admintered prior to the drinking of alcoholic beverages, but does ot seem to have any effect when alcohol is not taken. Aparently the vomiting is caused by the drug's interfering with n enzyme system which is concerned with the metabolism of lcohol. Use of this chemical for the treatment of alcoholics as first reported from Copenhagen, Denmark; it was being nvestigated in other countries during 1949. Its true role as a herapeutic agent awaited further evidence. It could produce angerous effects if given carelessly and should never be adinistered except under close medical supervision.

Vitamin B_{12}, a member of the B complex group, had been ound useful in combating certain anaemias. It was also reorted to influence favourably school children who appear to xhibit growth failure. When administered by mouth to these hildren, it was reported to effect such a favourable response hat one group of researchers suggested there might be a B_{12} unctional deficiency.

Methylene blue was used to overcome altitude sickness. The rug apparently in some way influences favourably the use of xygen in the tissues.

Glutamic acid was reported to aid some children with mental eficiency of a certain type; it was claimed to improve intellience.

Antihistaminics were used for bee stings, and calcium gluconate, for black widow spider bites.

Penicillin was found not to be a preventive for colds in an experiment in which a large group of individuals were given the drug at regular intervals. An interesting observation reported by several clinicians was the development of what looked like black hairs on the tongue following the administration of this drug. Actually, true hairs did not develop, but the papillae of the tongue became longer and blackened. When penicillin was discontinued, the hairy appearance disappeared.

Drug Production.—The monthly production of drugs in the United States remained at a high level in 1949. For example, in June seven producers of streptomycin made more than 7,000,000 g. of this drug; penicillin producers provided more than 11,000,000,000 units in May; also in May there were produced more than 78,000 lb. of ascorbic acid (vitamin C) and salts, 81,000 lb. of niacin and niacinamide (members of the vitamin B group), 17,000 lb. of thiamine (B_1), 577,000 lb. of sulfonamides, 22,000 lb. of phenobarbital and salts (sleeping tablets) and 900,000 lb. of aspirin. The medicinal and pharmaceutical preparations exported in May alone were valued at almost $15,000,000. In the same month almost 152,000 lb. of drugs of animal origin were imported, mostly from Argentina and Canada. The total exports of medicinal and pharmaceutical preparations from January to May amounted to $80,438,761.

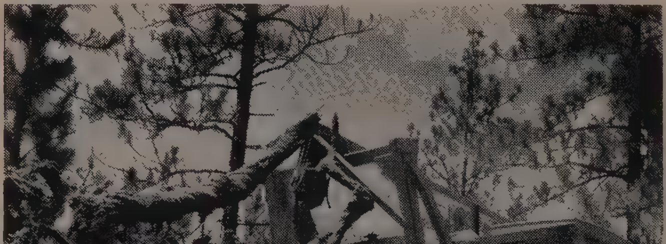
(*See* also ALLERGY; CANCER; DENTISTRY; HEART AND HEART DISEASES; MEDICINE; PNEUMONIA; SURGERY; UROLOGY; VITAMINS.)

(A. E. SH.)

Chemurgy.

A compilation made during 1949 revealed that industrial utilization of agricultural materials in the United States had increased until the total value of farm products going into chemurgic uses considerably exceeded $1,000,000,000 annually. A study released early in the year indicated that the total for the last year for which complete figures were available, 1947, had reached $1,187,525,000, and it was believed that as a result of further expansion during the two subsequent years, the annual rate had probably exceeded $1,250,000,000.

Among the items included were oils and fats, $700,000,000; corn and other grains for wet milling and distillation, $219,600,-



UPROOTING PINE STUMPS from which naval stores (turpentine, rosin, pine oil) were to be extracted at a nearby Hercules Powder Co. plant in Brunswick, Ga. Research into new and wider applications of naval stores was being conducted by several major companies in 1949

000; wood pulp, $40,000,000, and cotton linters, $15,125,000, for making chemical grade cellulose; tobacco used for producing nicotine and salts, $2,500,000; dairy products for lactic acid, $15,000,000, for casein, $8,000,000, for lactose, $5,000,000, and other items; sugar-cane bagasse and molasses, $3,500,000; naval stores, $103,000,000. Other chemurgic products on the list were glycerol, $40,000,000; furfural, $4,500,000; lecithin (from soybeans), $1,000,000; sodium glutamate, $8,000,000; tanning extracts, $12,000,000; and about $10,000,000 worth of other materials such as products from flax straw, wheat straw, corncobs, biological materials and numerous agricultural residues.

The Corn Products Refining company completed and began operating a 135-ac. plant during 1949 at Corpus Christi, Tex. When operating at capacity the factory would produce annually 100,000,000 lb. of dextrose from milo, which is grown extensively in Texas, besides starch, oils and 50,000 tons of livestock feed. Demand for dextrose was substantially increased during the year as the tire manufacturers converted to the new cold rubber process, which utilizes the corn sugar in large volume.

A new market for casein opened during 1949, which it was thought might consume more than $2,000,000 worth annually. The casein was used in the production of curled casein, a synthetic fibre so treated as to possess the resiliency of horsehair. Since it sold at 94 cents a pound, in contrast to a price of $1.25 and more per pound for Argentine horsehair, curled casein started in a favourable economic position. The manufacturer, the Rubber-Set company, found an early market in an automotive air filter, a use involving a potential demand for 1,000,000 lb. a year. Mattress and furniture manufacturers were expected to adopt the product, especially since the casein fibre was dependably clean and uniform and was believed to be nonallergic.

Chemurgy is concerned with nonfood markets for agricultural materials, with profitable uses for farm residues such as stalks and straw and with the establishment of profitable new crops. Interest in the new crop field was greatly heightened during 1949 by the announcement that a cure for arthritis had been derived from an African plant of the *Strophanthus* species. The curative agent, known generally as cortisone, had first been extracted from ox bile. The process proved almost prohibitively expensive, while calculations indicated that all the cattle annually slaughtered could not provide enough of the raw material to treat the estimated 7,000,000 victims of rheumatic diseases. Discovery of the plant source resulted immediately in expeditions being dispatched, one by government and one by private interests, to obtain seeds and cuttings of *Strophanthus* for study and for reproduction. Following the announcement it was also revealed that closely similar compounds were obtainable from the Mexican yam and from the soybean.

The exceptional interest attracted by the cure for arthritis created rising curiosity as to the values which may be concealed in many other species of wild plants. It was pointed out that while the earth's flora includes about 300,000 species, only about 1,500 kinds had been put to human use. It was believed that vigorous plant exploration, coupled with the application of such new tools as organic chemistry, plant genetics and power equipment, might discover that many neglected species in the vegetable kingdom could be made valuable to man and could be made profitable agricultural commodities. Fewer than 200 species are cultivated commercially in the United States.

The department of agriculture expended $113,000 during the fiscal year ending in 1949 for plant exploration abroad, maintenance of introduction stations and distribution of new plant material to state experiment stations. This was contrasted with total appropriations of $54,000,000 for the department's scientific, statistical and market research.

Aromatic tobaccos of the Turkish types were grown extensively in the United States for the first time in 1949. More th
1,500 ac. were reported harvested in 16 mountainous counties
the western areas of the Carolinas and Virginia. This was a ne
crop, being a type of tobacco formerly imported, and bei
adapted only to areas which up to 1949 grew no other kinds
tobacco. The crop returned a gross of $750 to $1,000 per ac
to the farmer. The research was headed by F. R. Darkis
Duke university.

While chemurgic studies have usually been undertaken to i
crease the nonfood markets of agriculture, the research pr
grams have led to new discoveries in the food field. One ne
principle of food preservation resulted in frozen concentrat
orange juice, which during 1949 consumed about 10% of t
Florida orange crop. A process called dehydrofreezing, whi
partially dries and then freezes, promised to save space a
weight in the storage and transportation of several kinds
fruits and vegetables. (W. McM.)

Cherries: *see* Fruit.

Chess.

Albert Sandrin of Chicago, Ill., won the Sturg
trophy, symbolic of the open championship in t
title tournament of the United States Chess federation
Omaha, Neb., in July. He won his final game from Herbe
Hickman of Pittsburgh, Pa., with a Sicilian defense lasting
moves. The coveted award for brilliancy also fell to Sandr
for daring play in ending his tenth-round game with Phil
Lecornu of Detroit, Mich.

Sandrin completed play with a mark of 10 won and 2 los
A. E. Santasiere, New York city star, was runner-up with 9
2½ and Larry Evans, also of New York city, placed third wi
a score of 9–3. Mrs. Catherine Jones of Columbus, O., on
woman competitor in the open, was the recipient of a speci
prize.

Herman Steiner of Los Angeles, Calif., kept his nation
closed championship, and laurels in the junior event were r
tained by Arthur Bisguier of New York city. George Krame
another New Yorker, captured the championship in the nation

INTERNATIONAL CHESS MASTERS tournament, held at Southsea, Eng., April 1949. First prize went to Nicholas Rossolimo of France (second righ
wearing scarf), who won with a score of 9 to 1

speed tournament. No play was conducted to determine a U.S. woman champion and as a result N. May Karff of Boston, Mass., and Gisela Gresser of New York city, who tied the previous campaign, continued as cochampions.

The New York State Chess association speed tourney drew a field of 40. Samuel Reshevsky of Boston, Mass., four-time national ruler, triumphed with a sweep of 16 games. Kramer was runner-up.

Max Pavey of Brooklyn, N.Y., finished first in the New York State association closed championship.

FILMS OF 1949.—*Chess Fundamentals* (Young America Films Inc.).
(T. V. H.)

Chiang Kai-shek (1887–), leader of nationalist China for two decades, and a foe of the Chinese Communists since 1927, "retired" on Jan. 21, 1949, from active service as president of China with the hope of ending the civil war. However, the Communists named Chiang as the top war criminal and chief tool of "American imperialism," and regarded his move as a trick. Despite Chiang's retirement, his position as director-general of the Kuomintang and his personal influence over many of the nationalist generals made him the authority behind the scenes. Early in 1949 many newspapers in nationalist China regarded Chiang as a major obstacle to the government policy of either peace or war with the Communists and openly demanded his going abroad. After the Communists took Nanking, Chiang appeared in threatened Shanghai on April 27 and again took an active part in the struggle. As the nationalist capital moved from Nanking to Canton, Chungking, Chengtu and Formosa, Chiang hopped between these points to rally anti-Communist forces. On July 16 a supreme council with Chiang as chairman and Acting Pres. Li Tsung-jen as deputy was formed to direct the fight against the Communists. Chiang visited Pres. Elpidio Quirino of the Philippines in July and Pres. Rhee Syngman of Korea in August in an attempt to form a Pacific union against Communism. These efforts and his repeated bid for U.S. aid brought no favourable response from the United States. With Acting President Li's departure for the United States late in the year, Chiang virtually exercised the authority of the presidency of the tottering national government. (*See* also CHINA.)
(H. T. CH.)

Chicago. Second largest U.S. city, a port of entry and the county seat of Cook county, Ill., Chicago lies at the southwest corner of Lake Michigan. It is the largest centre of U.S. rail traffic, and in 1949 its airports handled the largest volume of air-borne traffic in the country. The mayor in 1949 was Martin H. Kennelly.

The population of the city proper by the federal census of 1940 was 3,396,808. The U.S. census bureau estimated the population of the city in May 1949 at 3,632,532 and the population of the entire metropolitan district at 5,395,524, an increase of about 12% over the 4,825,527 counted in 1940.

Chicago enjoyed a comparatively tranquil year in 1949 with business activity slowly declining until a revival after the settlement of the national steel strike.

Bank clearings for the year dropped to $35,806,922,424 from $38,885,781,225 in 1948. Total outlay for new industrial plant in 1949 was $102,777,000, compared with $156,279,000 in 1948. Retail sales for 1949 were estimated at $4,200,000,000, or almost the same as in 1948.

Except for the steel strike, mostly in industrial suburbs, there was a marked decline in the number of strikes and the number of workers involved. They were respectively 70 and 64,887 in 1949, compared with 506 and 218,948 in 1948.

LODGE MEMBERS of the Ancient Arabic Order of Nobles of the Mystic Shrine for North America, on parade in Chicago, Ill., during a national convention of the order in July 1949

Passengers carried on the lines of the Chicago Transit authority declined. In Nov. 1949 the decline from the year before was 15%. But the utility also ended its monthly deficits because of a raise in fares to 15 cents on the surface lines and buses and to 17 cents on the elevated and subway. These were the highest fares in the country. Fares on the privately operated Motor Bus company remained at 13 cents.

The 22-month strike of printers against the five major daily newspapers ended Sept. 18 in a compromise. Attendance at the lake front Railroad fair's second season was 2,732,739, slightly exceeding the first year. A Fair commission was set up to plan and hold annual fairs, with varying themes, on the lake front.

A modernized building code was adopted by the city council Dec. 30 in the hope of stimulating private home building, in which Chicago had lagged behind the country at large and far behind its own suburbs. In the first 11 months of 1949 permits for individual homes in Chicago totalled 4,577; suburbs, 10,839; unincorporated suburban areas, 4,472. All types of construction in the first 11 months of 1949 involved an outlay of $361,038,152, about $10,000,000 more than the same period of 1948.

The over-all public relief burden of Chicago in 1949 approximated $22,000,000, with 52,411 on the rolls in December. Reductions of benefits amounting to 10% were ordered by the Illinois Public Aid commission and an investigation of abuses and frauds got under way at the close of the year.

The 1950 budgets of the six governments that cover Chicago in whole or in part follow: city of Chicago corporate fund, operating expenses only excluding bond interest, pension fund, etc. $81,337,584; Cook county $37,346,364; Chicago school board $111,784,314; Chicago sanitary district $29,533,913; Chicago park board $19,188,717; Cook county forest preserve district, approximately $4,660,193.

The gross bonded debt of the six overlapping governments was $309,439,600 of which the constitutional debt applicable to property within the city of Chicago was $275,198,000—3.42% of the assessed values and a per capita debt of $84.18.

(L. H. L.)

Child Labour. **United States.**—The number of employed minors remained high throughout 1949 according to monthly estimates of the U.S. bureau of the census. Twice as many (1,970,000) boys and girls of ages 14 through 17 years were employed full-time or part-time in April 1949 as in April 1940 (1,060,000), and about the same number as in April 1948 (2,040,000). During school months in 1949, one out of every four boys and girls in the United States, or more than 2,000,000, in this age group was employed.

Important and far reaching progress was made in federal law in the protection of boys and girls from undesirable employment, through amendments passed by congress in 1949, effective Jan. 25, 1950, to the child-labour provisions of the Fair Labor Standards act—the Wage and Hour law. The definition of oppressive child labour remained the same with a minimum of 16 years for most jobs, 18 years for jobs found and declared to be hazardous and 14 years for a few occupations outside school hours and with specified conditions of work, but coverage was vastly extended. Two signal achievements in strengthening the 1938 child-labour provisions of the act were (1) broadening them to protect children in the transportation, communications and other interstate industries and (2) giving children employed in agricultural jobs, where production is for interstate commerce, its full protection during school hours for the district in which the child is living while he is working. For the first time an effective bar against agricultural employment which competes with schooling became possible.

In 44 states, Hawaii, the District of Columbia and Puerto Rico, state employment or age certificates continued to be accepted as proof of age under the child-labour provisions of the Fair Labor Standards act through federal-state agreements; the state of Washington resumed the issuance of such certificates on June 9, 1949, and was redesignated by the secretary of labour as a state in which such certificates would be acceptable as proof of age under the federal act. Federal certificates of age continued to be issued in Idaho, Mississippi, South Carolina and Texas.

Legislatures of Maine, Tennessee and Alaska materially strengthened their child-labour standards during 1949, making a total of 22 states, and Puerto Rico and Alaska, which had set a basic 16-year minimum age for employment. Tennessee set a minimum age for employment at any time in any manufacturing or mechanical establishment and in bowling alleys, and raised from 14 to 16 years the minimum age for employment during school hours in any gainful employment except agricultural or domestic work. Maine set 16 years as the minimum age for employment at any time in any manufacturing or mechanical establishment, and in bowling alleys, hotels and places of amusement. It retained 15 years as the minimum for any work during school hours and set a minimum of 15 years for employment at any time in stores and in eating places. Both states improved provisions with regard to the 18-year minimum age for hazardous occupations and hours-of-work standard. The new Alaska child-labour law established a 14-year minimum age for general employment outside school hours, and under authority of the act the commissioner of labour set a minimum age of 16 years in a number of manufacturing and processing occupations and a minimum of 18 years for a considerable number of hazardous occupations.

Other Countries.—A number of countries during 1948 and 1949 ratified International Labour organization conventions on various aspects of child-labour regulations. These were: Argentina, convention 33 dealing with a 14-year minimum age for nonindustrial employment; France, convention 58 (revised), which sets as a standard a minimum age of 15 years for employment at sea; Bulgaria, convention 58 (revised), convention 60 with a minimum age standard of 15 years for nonindustrial employment, convention 77, which deals with medical examination of young persons under 18 years before admission to industrial employment, convention 78, medical examination for nonindustrial employment, and convention 79, which sets standards for the regulation of night work of young persons in nonindustrial employment; Poland, conventions 78 and 79; and Mexico convention 7, which sets a standard of minimum age of 14 years for employment at sea.

(E. S. J.)

Children's Books. In 1949 the lavish use of colour in U.S. picture books was less noticeable and fewer were published. Books of easy reading for the seven- and eight-year olds, however, were becoming more numerous, and there was recognition of the need for mature teen-age fiction. A distinctive contribution to folk literature was *A Harvest of World Folk Tales* edited by Milton Rugoff, while an unusual anthology was *My American Heritage* compiled by Ralph Henry and Lucile Pannell. Picture books gay with bright wash drawings were *Cocolo Comes to America* by Bettina, and Edward Ardizzone's *Tim to the Rescue. Susie the Cat* by Tony Palazzo was intriguing and *Sun up* by Alvin Tresselt carried well-integrated illustrations by Roger Duvoisin. Two unusual picture books were *Little Boy Brown* by Isobel Harris with drawings by André François and *Henry—Fisherman* by Marcia Brown, a story of the Virgin Islands.

Azor and the Haddock by Maude Crowley combined easy reading with rare humour, Eleanor Lattimore's *Deborah's White Winter* and Carolyn Haywood's *Eddie and the Fire Engine* appealed to girls and boys of seven to nine. The mechanically minded read *Pogo's Sea Trip* by Josephine Norling, *The Truck Book* by Margaret and Stuart Otto and *The First Book of Automobiles* by Campbell Tatham while *The First Book of Bugs* by Margaret Williamson also proved interesting.

Animal stories ran the gamut from *A Horse to Ride* by Grace Paull to *Vison, the Mink* by John and Jean George; a story about turf racing was *Bobcat* by C. W. Anderson while *Kalak of the Ice* (about bears) by Jim Kjelgaard was for junior-high age. Fairy tales were *The Treasure of Li-po* (Chinese) by Alice

Ritchie, Mary Hatch's *More Danish Tales* and *The Dancing Kettle* (Japanese) by Yoshiko Uchida. *Pecos Bill, Texas Cowpuncher* by Harold Felton and *The Marvelous Adventures of Johnny Caesar Cicero Darling* by M. Jagendorf were tall tales; *The Little Grey Men* by Denys Watkins-Pitchford and *The White Ring* (Cornish legend) by Enys Tregarthen were English. Humorous stories with a folk quality were *Sonny-Boy Sim* by Elizabeth Baker and *Great-Grandfather in the Honey Tree* by Sam and Zon Swayne. Readers of Robert Lawson chuckled over *The Fabulous Flight* (concerning a sea gull).

For the middle group *Treasure Mountain* (Oregon) by Evelyn Lampman and *Peter's Pinto* (Utah) by Mary and Conrad Buff proved interesting in their depiction of Indians and Mormons. Two stories laid in North Carolina were Ellis Credle's *Here Comes the Showboat* and Mebane Burgwyn's *Lucky Mischief;* Frieda Friedman in *A Sundae with Judy* wrote of New York city while René Prud'hommeaux dealt with adventure in the *Sunken Forest*. Historical stories were Frank Andrews' *For Charlemagne!* and *Two for the Show* (Shakespeare's England) by Isabelle Lawrence; Rebecca Caudill wrote of 18th-century Kentucky in *Tree of Freedom* while in *Midnight Patriot* Emma Patterson told of Revolutionary New York. The Fugitive Slave act was featured in *North Winds Blow Free* by Elizabeth Howard, and the Civil War was the theme of Walter Edmonds' *Cadmus Henry*. Suspense ran high in *Keep the Wagons Moving!* by West Lathrop. *Tidewater Valley* by Jo Evalin Lundy concerned the Swiss in Oregon.

Stories of other countries were *Golden North* (Canada) by Marie McPhedran, *Ali of Baku* (near east) by Judith Shouisky and Ruth McGibeny, *Bush Holiday* (Australia) by Stephen Fennimore, *At the Palace Gates* (Peru) by Helen Parish and *The Runaway Apprentice* (China) by Margery Evernden. For older girls sincere writing characterized *The Trembling Years* (adjustment to polio) by Elsie Barber and *Turn in the Road* by Marguerite Dickson. *Forty-seven Keys* by Erick Berry and *Sand in Her Shoes* by Mildred Lawrence treated writing and newspaper work while postwar Switzerland was the locale for Madeleine L'Engle's *And Both Were Young*. Books about minority groups were Florence Means's *The House Under the Hill* (New Mexico) and Chesley Kahmann's *Gypsy Melody*. Older boys enjoyed a powerful story of big-league baseball *Hit and Run* by Duane Decker; Mt. Rainier was the setting for *Escape on Skis* by Arthur Stapp and Mars for Robert Heinlein's *Red Planet*. The Belgian Congo featured in Dock Hogue's *Bob Clifton, Elephant Hunter*, and *The Talking Tree* by Alice Desmond concerned the Tlingit Indians of Alaska.

DRAWING from Elmer and Berta Hader's *The Big Snow*, which was awarded the 1949 Caldecott medal for excellence as a picture book for children

The nonfiction harvest was rich, as witness *Rodeo* by Dorothy Bracken. *A Pet Book for Boys and Girls* by Alfred Morgan was sound and Herbert Zim's *Snakes* was excellent. A beginning book on plant reproduction was *Bits that Grow Big* by Irma Webber. Clear instructions characterized *Fun with Paper Dolls* by Tina Lee and *Make It and Ride It* by C. J. Maginley. *How Your Body Works* by Herman and Nina Schneider was for 10- to 12-year olds; electrical energy from earliest times was discussed in *The Bright Design* by Katherine Shippen and *Television Works Like This* by Jeanne and Robert Bendick answered many questions. Biography ranged from *George Washington* by Genevieve Foster to *The Youngest General* (Lafayette) by Fruma Gottschalk and the unbiased *The Story of Franklin D. Roosevelt* by Marcus Rosenblum. *America's Ethan Allen* by Stewart Holbrook popularized a national hero. Biographies of women were *Golden Footlights* (Lotta Crabtree) by Phyllis Jackson and *The Story of Phillis Wheatley* by Shirley Graham. In poetry there was *Bridled with Rainbows* edited by Sara and John Brewton and *The Little Whistler* by Frances Frost.

The Bible inspired *The Christmas Story* edited by Elizabeth Yates and *The Lord Is My Shepherd* arranged by Nancy Barnhart; a traditional English song was *The Twelve Days of Christmas* illustrated by Ilonka Karasz and a simple U.S. Christmas story was *The Best Christmas* by Lee Kingman. Old favourites were republished to suit various tastes, as *The Emperor's New Clothes* (Hans Christian Andersen) illustrated by Virginia Burton; Glen Rounds illustrated an *Aesop's Fables* and Leonard Weisgard was successful in his pictorial interpretation of *Alice's Adventures in Wonderland, and, Through the Looking Glass* and *The Night before Christmas; Trigger John's Son* by Thomas Robinson received inimitable drawings from Robert McCloskey and for specialized use there was the *Newbery and Caldecott Awards* (a bibliography of first editions) by Irvin Kerlan. (*See* also BOOK PUBLISHING; LITERARY PRIZES.) (E. A. Gs.)

Great Britain.—The Library association Carnegie medal was awarded to Richard Armstrong for his *Sea Change*.

Biographical works included *Swan of Denmark*, a sensitive study of Hans Andersen by Ruth Manning-Sanders; *Fortune My Foe*, a readable account of Sir Walter Raleigh by Geoffrey Trease; and *Nelson the Sailor*, a critical portrait for older boys by Russell Grenfell. Evelyn Cheesman recounted her own experiences in *Camping Adventures on Cannibal Islands* and imaginary adventures of young castaways in *Marooned in Du-Bu Cove*. *The Story of Art* by E. H. Gombrich and *Our Bird Book* by Sidney Rogerson and Charles Tunnicliffe were amply illustrated. Practical advice was given in H. L. Heys's *Chemistry Experiments at Home for Boys and Girls*. *The Story of Your Home* by Agnes Allen and *The Young Traveller in India and Pakistan* by Geoffrey Trease were pleasantly informative. *The Children's Theatre Book for Young Dancers and Actors* by Cecile Walton was a vivacious introduction to stage technique. Arthur Stanley edited *The Bedside Book for Children*, a wide-ranging anthology.

Additions to folklore included *The Essential Uncle Remus*, a wise selection of Brer Rabbit tales with the original illustrations; African stories in *Where the Leopard Passes* by Geraldine Elliot; and *Legends of the United Nations,* edited by Frances Frost. *The Cat Who Went to Heaven* (published in 1948) was a Chinese legend of unusual delicacy and charm by Elizabeth Coatsworth. H. M. McGill retold Charles Perrault's *Tales of Long Ago;* Eleanor Farjeon contributed original fairy stories in *The Old Nurse's Stocking Basket.*

There was rollicking fun and fantasy in Eric Linklater's *The Pirates in the Deep Green Sea* and Ian Serraillier's *Captain Bounsaboard and the Pirates;* sly humour and magic in J. R. R. Tolkein's *Farmer Giles of Ham;* and animal characters in Hugh Lofting's *Doctor Dolittle and the Secret Lake.*

Among picture books of distinction were Kathleen Hale's gay and detailed *Orlando Keeps a Dog* and *The Story of Noah,* told and drawn with deceptive simplicity by Clifford Webb.

Books for boys included P. H. Newby's *The Loot Runners,* an exceptionally polished tale of modern smugglers, and John Connell's *The Return of Long John Silver,* a worthy continuation of *Treasure Island.* David Severn introduced a supernatural element in *Dream Gold. Snow Dog* by Jim Elgard and *Saltwater Summer* by Roderick Haig-Brown were vigorous tales of North America.

Girls read Noel Streatfeild's portrayal of Hollywood, Calif., in *The Painted Garden, Dusty's Windmill* by Kitty Barne, Elizabeth Goudge's lively and fanciful *Make Believe* and Kathleen Wallace's happy glimpse of a Chinese family in *Cross the Bridge and See.*

Modern social problems determined the plot of *A House of Their Own,* a convincing story by Martha Robinson, and Tasmania formed the background to *They Found a Cave,* an effective camping-out adventure by Nan Chauncy. Amateur sleuths were busy in *The "Polly Harris"* by Mary Treadgold and *The House on the Hill* by Elisabeth Kyle. Sailing was the main theme of *Kestrel* by Aubrey de Sélincourt and there was originality in *The Voyage of the Indian Brig* by Winifred Holmes.

Country life was depicted in *Winter at Pikey's Steep* by C. E. B. Roberts and *The Further Adventures of Farmer Jim* by D. H. Chapman, who also wrote *King Cuckoo,* an imaginative story of bird life.

Ancient Britain was the scene of exciting and sometimes violent adventures in *Kerin the Watcher* by Dorothy Severn and *Boadicea* by C. C. D. H. Abrahall and there was stirring intrigue in *The Young Jacobites* by Kenneth MacFarlane. In quieter vein, *The Great House* by Cynthia Harnett was a painstaking and satisfying story of life in the year 1690.

Life in other countries was skilfully blended into several stories for those under ten. New Zealand was pictured in *The Book of Wiremu* by Stella Morice; Lapland in *Somi Builds a Church* by R. Busoni; Africa in *Blue Smoke* by Y. M. Robinson; and French Martinique in *Simone and the Lilywhites* by Marie-Louise Ventteclaye. *Mimff in Charge* by H. J. Kaeser continued the adventures of a heroic small boy and there was irresistible humour in *My Friends the Beasts* by Allan K. Taylor.

(D. D. Ct.)

Child Welfare.

International Services.—A better world for children was envisaged in the Universal Declaration of Human Rights, approved Dec. 10, 1948, by the general assembly of the United Nations. Children as well as adults usually were included under the term "everyone," the opening word of most of the 30 articles of the declaration. The interests of children were especially stressed in: "The family is the natural and fundamental group unit of society and is entitled to protection by society and the State." (Art. 16, Sec. 3) and "Motherhood and childhood are entitled to special care and assistance" (Art. 25, Sec. 2).

Tangible contributions to child health in many parts of the world were made in 1949 by the United Nations International Children's Emergency fund (U.N.I.C.E.F.), the World Health organization (W.H.O.), and by various voluntary agencies such as the Red Cross in Scandinavian countries, the Cooperative for American Remittances to Europe, Inc. (CARE) and the American Friends Service committee. Children in western Europe were aided by the European Recovery program.

As in previous years the U.N.I.C.E.F. received some of its most generous support from small countries, both in government appropriations and in contributions from individuals. About two-thirds of the total of more than $141,000,000 received during the two years, 1948 and 1949, in cash or pledges came from 36 governments, of which more than $70,000,000 was from the United States on a matching basis. The U.S. provided 72% compared with 28% from other countries. The equivalent of $32,000,000 of the assets of the United Nations Relief and Rehabilitation administration comprised about 22% of the fund's resources. The balance of more than $10,000,000 was obtained from popular appeals in 40 countries. The work of the U.N.I.C.E.F. was not restricted by national boundaries as were many international services. It maintained programs on both sides in war-torn China and in 1949 operated freely in the four zones in Germany and Austria, and in the countries of central and eastern Europe.

The U.N.I.C.E.F. recognized that in parts of Asia tuberculosis among children was more than twice as prevalent as in western countries and that malaria, syphilis and yaws presented acute health problems. Consequently the program in the east consisted mostly of supplying medicines and equipment, and training local personnel in techniques for the control of specific child welfare problems. In Europe and North Africa much progress was made in the world-wide campaign to test 100,000,000 children for tuberculosis. In those areas the work was sponsored also by the W.H.O. and the Red Cross from Scandinavian countries. In three years 18,500,000 children and young adults were tested for tuberculosis and 8,500,000 whose tests were positive were vaccinated against this disease with Bacillus-Calmette Guérin (BCG) serum. U.N.I.C.E.F. programs were approved in 16 of the smaller countries in Central and South America. Mexico, also included in these plans, was to provide the location for a laboratory for the production of Bacillus-Calmette Guérin serum for the Latin American countries. Programs of an emergency nature were developed in Ecuador, following the 1949 earthquake, and in the middle east among the Arab and Jewish refugees.

The World Health organization gave priority to children in much of its work. In addition to its efforts in co-operation with other agencies the representatives of the W.H.O. surveyed the tuberculosis problem in many countries and set up laboratories for the manufacture of BCG vaccine. Outstanding among its achievements in 1949 was the most successful advance in history against the ravages of malaria, which annually afflicts about 300,000,000 and kills about 3,000,000. Again, usually in co-operation with other agencies, notably the U.N.I.C.E.F. and national health authorities, the W.H.O. sent teams of trained health workers, including public health engineers, on malaria control missions to Afghanistan, Bulgaria, Greece, Hungary, India, Iran, Italy, Pakistan, Rumania, Sardinia, Thailand, Turkey and Yugoslavia, reducing the incidence of the disease and reclaiming malaria-infested agricultural areas as well as rehabilitating many who live on farms. In some districts food production was increased as much as 70%. Gammexane and DDT were the most widely used insecticides. Two new medicines which proved effective weapons against malaria were paludrine and chloroquine. Venereal diseases, in some areas affecting nearly half of the population, were combated, again under co-operative arrangements proven so successful in dealing with malaria and tuberculosis. Prenatal and infantile syphilis were treated with penicillin in mass campaigns in several countries. The sanitation program of the W.H.O. led to improvement of water supply and sewage disposal systems and destruction of disease-carrying insects, factors which lowered rates of morbidity and mortality among children. With such improvements some areas saw the death rate among infants cut from 30 to 3 per 100 births in a comparatively short time. The W.H.O. and the Food and Agricultural organization promoted a "food for health" program, stressing health education of the public.

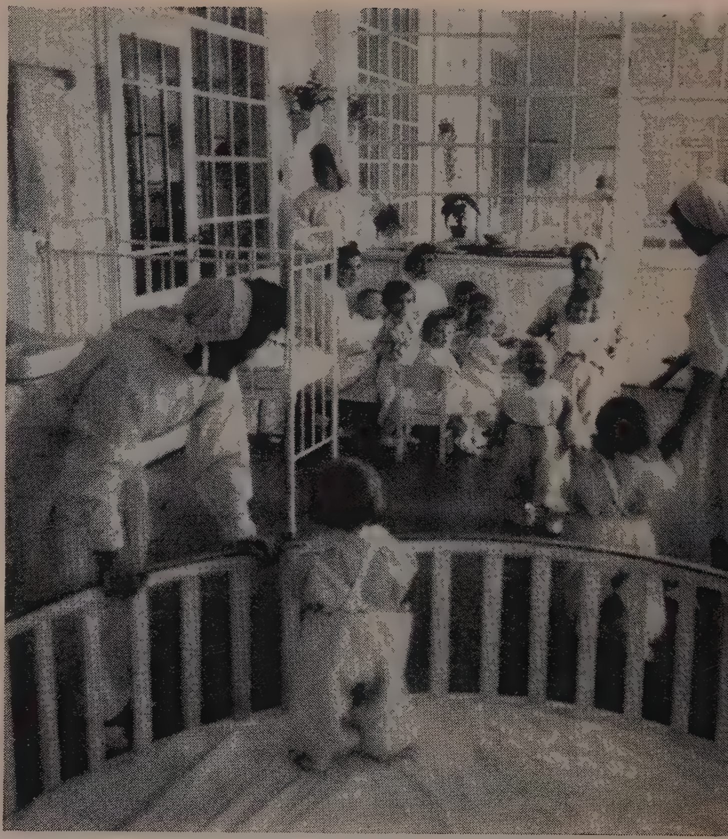
The shipment of food to the war-torn regions of Europe was continued by various nonsectarian and sectarian agencies from the more favoured parts of Europe and overseas. The production of food in most European countries had improved to the extent that there was less rationing in 1949 though a substandard diet still retarded child development in many parts of Europe. There was a marked tendency to adapt programs and use an increasing portion of relief resources for cultural purposes. In July 1949, the first large shipment of books by CARE in its "Food for Hungry Minds" program went to the University of Louvain in Belgium, one of 12 universities in Asia and Europe thus assisted during the year.

Conferences which continued international consideration of child welfare problems begun since World War II included the Second Pan American Congress of Social Work, Rio de Janeiro, Brazil, July 2–9; the Second Pan American Congress on Pediatrics, Mexico City, Mexico, Nov. 2–5; and the Second International Congress for the Education of Maladjusted Children, Amsterdam, Netherlands, July 18–22.

National Developments.—Activities sponsored by the government of India in behalf of children included a continuation of the All India Conference of Social Work, with its second annual session in Madras, Dec. 18–22, 1948. A child welfare exhibition opened in New Delhi, April 18, 1949, under the auspices of the Indian National Committee of the United Nations Appeal for Children. The Indian parliament enacted laws raising the marriageable age of girls from 14 to 15 years.

Poland, like most of the other countries of Europe, made marked progress in services affecting child health. The ministry of health reported a decrease in infant mortality from 26.9% in 1945 to 13.3% in 1946 and 9.7% in 1947. The plan for health services stressed especially the needs of farm communities and mothers and children. The achievements realized were remarkable in view of the scarcity of professional workers, the prewar number of physicians and dentists being about twice as many as those available at the end of the war. The number of practitioners was increased in the postwar years but the shortage was so great as to require long range planning if substantial progress was to continue. The health ministry expected to treble the number of physicians and toward this end effected the establishment of seven university medical departments and three academies of medicine, since the war's end. Assistance was received from Scandinavian countries, the Soviet Union and the health agencies of the United Nations.

Uruguay developed a unified health and welfare service, The Council of the Child, an outgrowth of a children's code enacted in 1934. Policies emphasize the importance of keeping mother and child together, allowing aid to the mother who has difficulty in supporting her child, this being available to unmarried mothers. The care of dependent children in foster homes also was extended under the new services. Among other developments significant to child welfare in Latin America was the publication in Jan. 1949, of a new periodical *Infancia y Adolescencia* in Caracas by the Venezuelan Council of the Child.


POLISH DAY NURSERY at a state-expropriated candy factory in Warsaw, where children up to seven years of age were cared for while their mothers were at work in the plant

The British commonwealth countries, though embarrassed by deteriorations in the postwar economy, sustained social insurance and related services including the various health services which had proved so valuable to children. Family allowances in Australia and New Zealand, apparently were to remain unchanged even though the elections late in 1949 brought defeat to the Labour party in each country. Announcements of the new cabinet in New Zealand, made early in Dec. 1949, designated a minister without portfolio who was to be responsible for matters pertaining to the welfare of women and children.

The United Kingdom in 1949 completed the first year of services to children under the Children bill enacted by the British parliament in June 1948. This, added to the provisions for family allowances, first effective in Aug. 1946, and the expanded health services for adults and children, authorized by parliament in July 1948, placed the United Kingdom in the front rank of those nations recognizing in terms of services and allowances the needs of all children. In 1949 the Home Help services of Great Britain, a voluntary service with strong support from the national and local authorities, was expanded and strengthened as an adjunct to health and welfare services, giving priority to families which need assistance in the care of children under five years of age until the mother is able to resume her household duties following the birth of another child.

The United States had about the same number of children born in 1949 as in 1948, approximately 3,500,000. Recent population increases had led to the overtaxing of schools, hospitals and other facilities essential to the welfare of children, and had increased the need for nurses, physicians, social workers and teachers. The shortage of nurses was apparent in 1949, when many hospitals remained inadequately staffed during the severe epidemic of poliomyelitis.

Plans for the Mid-Century White House Conference on Children and Youth, to be held in Dec. 1950, were advanced especially in preparatory conferences held in most of the states. Among the national meetings for this purpose was the first Protestant Conference on Child Welfare, held in Columbus, O., Oct. 18–19, 1949.

A three-year nation-wide study of child health services, completed in 1949 by the American Academy of Pediatrics, was made with the assistance of other agencies, notably the children's bureau and the public health service of the Federal Security agency. A two-volume report of this study, published by the Commonwealth fund, gives a comprehensive appraisal of health services, stressing two over-all needs: the inadequacy of the general practitioner's training in pediatrics and the scarcity of health services for children in rural areas.

There was little change in the child labour situation, with more than 2,000,000 youth 14 to 17 years of age employed. Federal regulation of child labour, in effect for ten years under the Fair Labor Standards act, had resulted in reduction of much harmful employment of children. Inadequate state laws still allowed employment of many who should be attending elementary schools. The child labour research and youth employment services of the federal government were returned to the bureau of labour standards of the U.S. department of labour after two years of administration in the wage and hour and public contracts divisions of the department. The enforcement of the child labour provisions of the Fair Labor Standards act remains the responsibility of those divisions. Both the American Federation of Labor and the Congress of Industrial Organizations, at conventions held late in 1948, adopted resolutions condemning the continuance of child labour and urging increased appropriations for enforcement of federal and state child labour laws and improvement of state laws governing child labour and school attendance. (*See* also BIRTH STATISTICS; CHILD LABOUR; CRIME; INFANT MORTALITY; JUVENILE DELINQUENCY; MARRIAGE AND DIVORCE; RED CROSS; SOCIAL SECURITY.)

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(H. W. HK.)

Chile.

A republic extending along the southern Pacific coast of South America for about 2,600 mi., Chile has an average width of 110 mi. It is bounded on the north by Peru, on the south by the Antarctic ocean, on the east by Bolivia and Argentina and on the west by the Pacific ocean. It has an area of 286,323 sq.mi. and a population of 5,704,000 (May 1949 est.). Santiago, the capital, has 1,046,857 inhabitants (Dec. 1946, est.). Other leading cities are: Valparaíso with 198,065 inhabitants; Viña del Mar (85,725); Concepción (84,953); Antofagasta (47,326); Talca (44,859); Temuco (37,105); Iquique (34,864); Chillán (31,687) and Valdivia (30,308). Religion: Christian, mainly Roman Catholic. President in 1949, Gabriel González Videla.

History.—During 1949 Chile reaffirmed its belief in democratic principles, made efficient attempts to solve its economic crisis and resisted Communist encroachments. Early in the year its relations with Venezuela became strained because it brought before the consideration of the Organization of American States the unwillingness of the military junta to allow Ex-President Rómulo Betancourt, who had taken refuge in the Colombian embassy, to leave the country.

Late in January the government gave up its power to discharge Communists from public office and freed more than 700 imprisoned Communists. In the elections held in March, the first in which women voted, González Videla won a two-thirds majority in both houses of congress. Communist deputies were reduced from 15 to 6, and out of their 5 senators they retained 2 hold-overs.

In March Chile signed a protocol of friendship and collaboration with Italy.

In his message to congress in May, President González Videla announced that technicians were working on data for a vast irrigation project of the semiarid valley between rich agricultural central Chile and the northern nitrate desert. He also

SCHOOL CHILDREN PLAYING POOL at one of the 135 tables available to them at New York city public school recreation centres in 1949. The tables were installed by the board of education's division of community education, as a step toward combating juvenile delinquency

announced that the year 1948 ended with a budget surplus of more than $18,000,000, and that the Anaconda Copper corporation would spend more than $130,000,000 in new processing and mining facilities.

The drop in the price of copper, however, from 23 to 16 cents a pound about three years before the government had anticipated it and had been able to finish its industrialization and development plans, plus a proposed two cents tax by the U.S. on copper imports, seriously affected the country's economy. The current price was four cents less than was required to cover costs and the creation of a government corporation to sell copper was advocated. Small Chilean-owned mines wanted to close down, but 96% of the copper-production industry was American-controlled and some other solution was needed.

Alberto Baltra, economy and commerce minister, visited the U.S. to seek a solution, and urged Trygve Lie that a United Nations economic commission for Latin America be set up to make studies to carry out President Harry S. Truman's Point Four program in Chile.

Demonstrations in the copper mines, which González Videla charged had been "synchronized" to the Bolivian unrest by anti-democratic forces, caused the death of 1 soldier and the wounding of 26 other persons.

In mid-August martial law was declared to cope with the widespread disorders into which the Communists had turned the rioting initiated by university students protesting a small increase in bus fares in Santiago. The transportation strike was followed by disorders in the mining areas, and a railway and bank strike. The navy was sent to protect the mines and the arrest of Communist leaders, including Humberto Abarca, former member of the chamber of deputies, ended the disorder. There were 328 government employees dropped as Communist sympathizers. After the disorders, Foreign Minister Germán Riesco, Agriculture Minister Victor Opaso Cousiño, Public Health Minister Guillermo Varas Contreras and Labour Minister Luis Felipe Letelier resigned, but González Videla, who had emerged from the crisis with great prestige, refused to accept their resignations.

To meet the economic crisis the government decreed strict budget economy, obtained a $25,000,000 Export-Import Bank loan and, upon the recommendation of the International Monetary fund, proposed to devalue the peso from about 43 to 65 to the dollar. The dollar shortage and inflation still constituted serious problems, and Finance Minister Jorge Alessandri expressed grave concern over their solution.

President González Videla accepted an invitation extended by President Truman to visit the United States during 1950. (*See* also ANTARCTICA.) (J. McAD.)

Education.—In 1945 the public primary schools had 452,826 pupils and the private primary schools, 93,185 pupils. Secondary schools had about 55,000 pupils. University education is available at the state university of Chile, the Catholic university of Santiago and the University of Concepción.

Finance.—The monetary unit is the peso, valued at $0.01 U.S. currency, free (nontrade rate), on Nov. 30, 1949. The rate for imports into Chile was either $0.0323 or $0.0232, depending upon their importance to the Chilean economy. The 1950 budget, as submitted to congress, estimated revenue at 14,264,000,000 pesos (1949: 13,952,200,000 pesos) and expenditure at 14,264,500,000 pesos (1949: 13,035,000,000 pesos). The funded foreign debt totalled $242,300,000 on Dec. 31, 1948; the direct debt on Dec. 31, 1947, was 7,661,000,000 pesos plus guarantees of 1,767,000,000 pesos. Notes and coins in circulation on Oct. 31, 1949, totalled 4,662,000,000 pesos; the gold reserve was $43,400,000. Total sight and current account deposits on Oct. 31, 1949, were 10,396,000,000 pesos; time deposits were 4,697,000,000 pesos and government deposits, 2,577,000,000 pesos.

Trade and Communications.—Exports in 1948 totalled 1,597,613,895 gold pesos; imports were 1,303,793,433 pesos. Leading exports were copper bars (59%), nitrate (16%), beans and lentils (3%) and wool (2%). Leading imports included industrial machinery and equipment (16%), oils, paints and chemicals (13%), textiles (10%), iron and steel products (9%) and petroleum and diesel oil (8%). The leading customers were the U.S. (53%) and the United Kingdom (8%); the leading suppliers, the U.S. (42%), Peru (13%) and Argentina (10%).

Railroads (1947) totalled 5,154 mi. Highways (Dec. 31, 1947) included 1,785 mi. of international highway, 3,815 mi. of national highway and 26,300 mi. of provincial roads. In 1948, 36,770 automobiles, 4,132 buses and 27,580 trucks were registered. According to Lloyd's Register of Shipping, the merchant marine had 92 steamers and motorships (100 tons and over) aggregating 188,168 gross tons on June 30, 1948. The national airline (Linea Aerea Nacional) flew 2,700,000 mi. in 1948. In 1949 there were 48 long-wave and 11 short-wave radio stations. Telephones (1946) numbered 113,585.

Agriculture.—Production of principal crops in the crop year 1947–48 was as follows (in short tons): wheat, 1,180,742; barley, 120,322 (1948–49: 94,903); oats, 79,617 (1948–49; 89,609); potatoes, 613,972; maize, 81,788; rice, 98,569; beans, 80,642; tobacco, 6,350 (1948–49: 8,610). Fruits and vegetables are cultivated extensively. Cattle numbered 2,310,222 in 1948. The last census of other livestock showed 5,749,069 sheep and 810,206 goats. Wool production averages 17,000 short tons a year.

Manufactures.—Manufacturing establishments were reported to number 5,585 in 1948, with a capital of 1,466,587,000 pesos and 296,000 employees. There are 372 textile factories, including 40 cotton mills, 220 knitting mills, and 46 silk and rayon mills. Production figures (1948) (in short tons) included woven cotton fabrics, 203,000,000 yards; wool yarn, 530; cement, 595,000; pig iron, 15,900; steel ingots and castings, 32,900; cigarettes, 5,088,440,000 (units). The index for manufacturing industries stood at 155 in Aug. 1949, and employment in manufacturing was 138 (1937=100). Electric energy is employed extensively; production in 1948 was 1,064,000,000 kw.hr. The cost of living index stood at 528 in July, 1949, the wholesale price index at 397 and the wholesale textile price index at 376 (1937=100).

Mineral Production.—Chile is the leading mineral-producing country in South America. Production in 1948 included copper, 490,467 short tons; nitrate of soda, 1,969,320 short tons; iron ore, 2,988,270 short tons; coal, 2,462,602 short tons; gold, 164,254 troy oz.; silver, 861,941 oz.; manganese, 21,332 short tons and mercury, 17.8 short tons. Mineral production was valued at 4,701,844,832 pesos in 1946.

FILMS OF 1949.—*Chilean Nitrate; People of Chile* (Coast Visual Education Co.).

China. A large republic of eastern Asia, China has an area of about 3,876,956 sq.mi., divided, at the end of 1949, into the People's Republic, under the Communists, dominating practically all the mainland of China, and the republic, under the nationalists, controlling a few pockets in southwest China and the islands of Hainan and Taiwan (Formosa). The government of each republic claimed to be the sole legal government for all China. Peking (name changed from Peiping on Sept. 27) was declared the seat of the People's Republic of China on Oct. 1; Taipei, Formosa, became the capital of the national government in December.

The 1948 official estimate placed the total population of China at 463,493,418 and the population in the principal large cities as: Shanghai 4,630,385; Peking 1,721,546; Tientsin 1,772,840; Canton 1,128,165; Nanking 1,113,972; Mukden 1,021,057; Chungking 985,673; Tsingtao 850,308; Harbin 760,000; Hankow 721,598; Sian 628,499; Dairen 543,690; Changchun about 500,000.

President: Mao Tse-tung (*q.v.*), chairman of the Central People's government since Oct. 1, 1949; Li Tsung-jen (*q.v.*), acting president of the national government after Chiang Kai-shek's (*q.v.*) resignation on Jan. 21, 1949.

History.—The 22-year struggle between the Kuomintang led by Chiang Kai-shek and the Communists led by Mao Tse-tung resulted in the domination of China by the latter. When the Communists began their offensive in China proper in Nov. 1948 they controlled about one-third of China with an approximate population of 200,000,000. Partly because of the defection and disintegration of the nationalist armies, inefficiency and unpopularity of the national government and the abhorrence of the people of civil war, the Communists practically completed the military campaign by the end of 1949.

After the Communists captured Tientsin on Jan. 15 and the nationalist agreement of Jan. 22 to surrender Peking, the Communists drove toward Nanking. In response to appeals for peace, Mao Tse-tung stated on Jan. 14 the willingness of the Communist party to negotiate peace on the following terms: (1) punishment of "war criminals"; (2) abrogation of the 1946 constitution; (3) abolition of the existing form of government; (4) reorganization of the revolutionary armies; (5) confiscation of the bureaucratic capital; (6) land reform; (7) abrogation of the treaties of national betrayal; (8) establishment of a democratic coalition government without the participation of reactionary elements. On Jan. 22, one day after President Chiang's resignation, Acting President Li accepted these conditions as a basis for negotiation. In the meantime the Communists insisted on the surrender of the "war criminals."

In order to line up all the nationalist elements behind his peace efforts Li flew on Feb. 20 to Canton, which had been designated as the nationalist capital, and succeeded in bringing back to Nanking Premier Sun Fo and his cabinet about a week later. Following the visits of the unofficial peace mission and the preliminary peace delegation from Nanking with the Communist leaders in Peking, Mao Tse-tung agreed on Feb. 9 to call a peace conference within a month. Premier Ho Ying-chin, successor to Sun Fo, named the nationalist peace delegation headed by Gen. Chang Chih-chung. The Communist party appointed Chou En-lai chief of the Communist peace delegation and declared peace talks should be begun on April 1 in Peking. Before negotiations got under way the Communists had sufficient time to regroup their forces marching toward Nanking and the Yangtze river. From April 2 to 12 the peace delegates exchanged their views informally over three fundamental Communist demands: (1) the Communist armies be allowed to cross the Yangtze river to help reorganize the nationalist troops; (2) an interim government with Mao as chairman and Li as one of the vice-chairmen must be established; (3) the Chiang, Soong, Kung and Chen families must be punished.

On April 13 formal negotiations opened. Three days later Mao's peace program was expanded to 24 items with the crossing of the Yangtze by the Communist armies and elimination of the national government as the key issues. On April 17 the Communists gave the nationalists three days to make up their minds. Two days later Li's government refused to sign the 24-point peace draft. A few hours after the rejection the Communist armies started an all-out offensive. The fall of Nanking on April 24 marked the beginning of the disintegration of the national government.

Early in May the Communists started their drive to Hankow and final assault on Tsingtao and Shanghai. Hankow was captured on May 17; Shanghai on May 25; and Tsingtao on June 2. To consolidate the nationalist forces, a supreme council with Chiang Kai-shek as chairman and Li Tsung-jen as deputy was created in June in Canton and Marshall Yen Hsi-shan became premier succeeding General Ho. In July the Communists opened their drives in south China and the northwest. Changsha, the rice-bowl bastion, fell on Aug. 5; Foochow, an important seaport, on Aug. 17; Lanchow, a fortress city in the northwest, on Aug. 28. On Oct. 10, the national government officially informed foreign diplomats of its second shift of capital to Chungking. The Communists took over Canton on Oct. 15 and Amoy on Oct. 17. In the autumn the Communists penetrated the southwest. The nationalists abandoned Kweiyang, about 200 mi. south of Chungking, on Nov. 13. On Nov. 24 Chengtu was designated as the seat of the much reduced national government. On Nov. 20 Acting President Li arrived in Hongkong instead of going to Chungking and left on Dec. 5 for medical treatment in the United States. Chungking fell on Nov. 30 and on Dec. 8 the nationalist capital was moved to Taipei, Formosa. The Communists began their entry into Chengtu on Dec. 26. After the Communists occupied Nanning on Dec. 6 Gen. Pai Chung-hsi's army was forced to flee to Hainan and Indo-China. Following the examples of the generals in Sinkiang, the governors of Yünnan and Sikang switched to the Communists in early December. By the end of 1949 the People's government controlled practically all China's mainland except Tibet. Although the civil war not yet ended, its cost in human lives alone was staggering. According to the Communist official figures, the total casualties from 1947 to July 1949 were 1,432,900 for themselves and more than 5,000,000 for the nationalists.

On the foundation of their military success the Communists with the support of minority parties established a preparatory committee of about 134 members in June to make plans for the forming of the People's government. From Sept. 21 to 30 the first session of the People's Political Consultative conference of more than 600 delegates was held to approve the work of the preparatory committee, enact the organic law of the Central People's government, elect Mao Tse-tung as its chairman, elect six vice-chairmen and the other 56 members of the Central People's Government council and proclaim the founding of the People's Republic of China on Oct. 1. On Oct. 2 the Government council, the highest legislative and executive body, took office; it appointed Chou En-lai as premier of the State Administration council, which was to supervise the work of about 30 ministries, and concurrently minister of foreign affairs, Mao Tse-tung as chairman of the People's Revolutionary Military council, Chu Teh as commander in chief of the People's Liberation army, Shen Chun-ju as chief justice of the Supreme People's court and Lo Hung-huan as procurator-general; and declared itself the sole legal government of China. On the same day the U.S.S.R. government announced it had given diplomatic recognition to the People's Republic of China. All other Communist-controlled countries followed suit. On Dec. 16 Mao Tse-tung arrived in Moscow for a state visit. In December Burma and India extended *de jure* recognition to the People's Republic of China.

The nationalist attempt to seek diplomatic mediation of the civil war and foreign aid for their cause met no favourable response. On Jan. 8 the national government requested the Big Four to act as intermediaries in the initiation of negotiation with the Chinese Communist party for peace. Immediately the United States replied that such a request would not serve any useful purpose. The United Kingdom, France and the U.S.S.R. likewise refused the request. On Feb. 9 Herbert Evatt, president of the third session of the general assembly, suggested that the United Nations should mediate the Chinese civil war. The national government welcomed the suggestion but the Communist spokesmen declared that neither the United Nations nor any foreign government had any right whatever to interfere in China's domestic affairs. The matter was dropped.

In September the fourth session of the general assembly voted to include the complaint of the Chinese delegation against the soviet violations of the Sino-soviet treaty of 1945 on its agenda. In a note to the general assembly dated Nov. 5 Chou En-lai stated that the People's government repudiated the legal status of the Chinese delegation of the national government. When the political committee of the general assembly debated the Chinese case in late November, the Chinese delegation submitted a draft resolution urging the member states to desist and refrain from giving any military and economic aid to the Chinese Communists and not to accord diplomatic recognition to the People's government. The soviet delegation refused to participate in the debate and declared it no longer recognized the right of the national government to be represented in the United Nations. The United States, the United Kingdom, France and several other members indicated their unwillingness to support the Chinese draft resolution. As a result the general assembly adopted in early December two resolutions calling upon member states to respect China's independence and territorial integrity and referring the matter to its interim committee for further examination and report.

Sino-U.S. relations deteriorated. Early in 1949 the United

Above: **MAO TSE-TUNG** (centre) at a planning conference held in Peiping, capital of Communist-held China, in Aug. 1949. On Oct. 1 the Communists formally proclaimed a Chinese People's Republic with Chou En-lai as premier and Mao Tse-tung as party leader

Above: **NATIONALIST TROOPS** captured in the fighting at Woosung, May 27, 1949, being herded to a prisoner-of-war camp by Chinese communists (wearing helmets)

CHINESE COMMUNIST IRREGULARS joining Communist troops near the Kwangsung-Kwangsi border on Oct. 31, 1949, after operating for a year behind nationalist lines

Below: **CHINESE REFUGEES**, among the thousands who streamed into Shanghai from adjacent war areas early in 1949

States withdrew its marines from China and Economic Co-operation administration offices from the Communist-held cities. To avoid involvement the United States ordered all its ships out of Shanghai on April 25. Effective June 26 the nationalists blockaded all ports held by the Communists. The United States regarded the nationalist action as illegal. Despite the nationalists' repeated bid for U.S. aid and proposals by some congressmen for such aid the state department gave no favourable response. The White Paper on China published by the state department put the sole blame on Chiang's regime for its collapse, regarded more aid as futile and warned the Communists to avoid aggression.

The policy and attitude of the Communists toward the United States proved irritating. On June 20 Mao Tse-tung declared that the Chinese Communists belonged to the anti-imperialist front headed by the U.S.S.R. The Communists ordered the closing of the U.S. information offices in Peking, Shanghai and Hankow, arrested a U.S. vice-consul in Shanghai on the charge of obstructing a parade and refused to issue exit permits to several U.S. officials. Following the establishment of the People's Republic of China, news media of countries that failed to recognize the new regime were banned. The most serious act was the arrest of U.S. Consul General Angus Ward in Mukden in October; he was released after strong protest from the United States.

On Dec. 31 it was reported that Pres. Harry S. Truman and the U.S. National Security council agreed not to take any military measures for the defense of Formosa and to withhold recognition of the People's Republic of China.

Education.—Civil war impeded educational advancement. In 1947 there were about 790,000 primary schools with about 23,800,000 pupils and 5,892 secondary schools with more than 1,800,000 students. Many of these schools were closed in 1949. In 1948 there were more than 200 institutions of higher learning with about 140,000 students; most of these continued to function in 1949. In some a new curriculum with emphasis on Marxian ideology was introduced. In December the People's government made plans for the founding of People's universities.

Defense.—Toward the end of 1949 the fighting strength of the nationalist army was reduced to approximately 300,000 while the People's Liberation army increased to more than 4,500,000. The national government still maintained an air force of about 200 planes and a navy of more than 100 small vessels. About 80% of nationalist expenditures was for military purposes. It was reported that the People's government devoted about 38% of its budget to military functions.

Finance.—Civil war threw China's finance into confusion. Complete budget figures of 1948 and 1949 were unavailable. Both the national and People's governments faced deficits. The 1948 budget deficit of the national government was about 63% and in 1949 before the fall of Canton the nationalist monthly revenue was estimated at 20,000,000 Canton silver yuan while the monthly expenditures from both Formosa and Canton were about 50,000,000 yuan. The deficit was being financed by the sale of gold, silver and foreign exchange, of which the nationalists possessed to the value of about U.S. $200,000,000. In December it was revealed that more than 60% of the budget deficit of the People's Government was to be met by a new note issue and victory bonds. Before the nationalists were driven out of Nanking the gold yuan notes in circulation reached more than 30,000,000,000 and the unit value depreciated from about 1,500 gold yuan to U.S. $1 in January to 13,000 gold yuan to U.S. $1 in March. After Nanking fell, the provinces remaining under the nationalist control adopted silver yuan as a currency unit, and the exchange value was about two for one U.S. dollar. In December the official rate of exchange of the Formosa currency was 5 yuan to U.S. $1. In Dec. 1948 the People's Bank of China was established as the central bank having the sole right of note-issue for the areas under Communist control. The exchange rate of the People's bank dollar was 300 to U.S. $1 in May. In October it had depreciated to 4,500 to U.S. $1.

Trade and Communication.—Uncontrolled inflation and civil war crippled foreign trade. In 1948 import and export trade showed a decline from the 1947 figures. In terms of U.S. dollars, China's 1948 export amounted to $173,000,000 against $226,000,000 for imports. The United States headed the list of countries trading with China. Economic aid of $275,000,000 from the Economic Cooperation administration and military aid of $125,000,000 which expired in April helped sustain trade and production.

By the end of 1949 the People's government controlled all the railways on the mainland, totalling more than 13,000 mi., many of which needed repair. About half of China's highways totalling about 100,000 mi. were not usable. However, the inland water traffic showed an increase in 1948. Tele-communication lines further deteriorated.

Agriculture, Manufactures, Mineral Production.—China continued to suffer food shortage because of low production, over-population, civil war and floods. Military and political developments hampered the growth of industry and mining. The People's government decided to concentrate its first efforts in industrial development in Manchuria. The following tables show the general trend of agricultural and industrial production of 1947 and 1948 in comparison with the prewar figures.

Table I.—*Estimated Production of Major Industries and Mining in China*

(In thousand tons)

Unit	1948	1947	1935–39 average
Coal	13,800	19,000	36,000
Iron ore	158	150	3,360
Pig iron	11	6	1,535
Steel	44	57	810
Tin in ore	4.9	4.1	10.9
Tungsten	9.6	7	12
Cotton yarn	366	299	394
Cement	550	500	710
Electric power (million kw.)	2,860	3,120	3,130

Table II.—*Estimated Production of Chief Crops in China*

(In thousand tons)

Unit	1948	1947	1934–38 average
Paddy rice			
22 provinces	46,524	46,507	50,064
Manchuria	460	459	411
Formosa	1,200	1,205	1,642
Wheat and rye			
22 provinces and Manchuria	25,582	23,647	22,640
Coarse grains			
22 provinces	28,454	27,662	30,494

COMMUNIST ADVANCES in China 1946–49 (adapted from a series of maps in the *New York Times*)

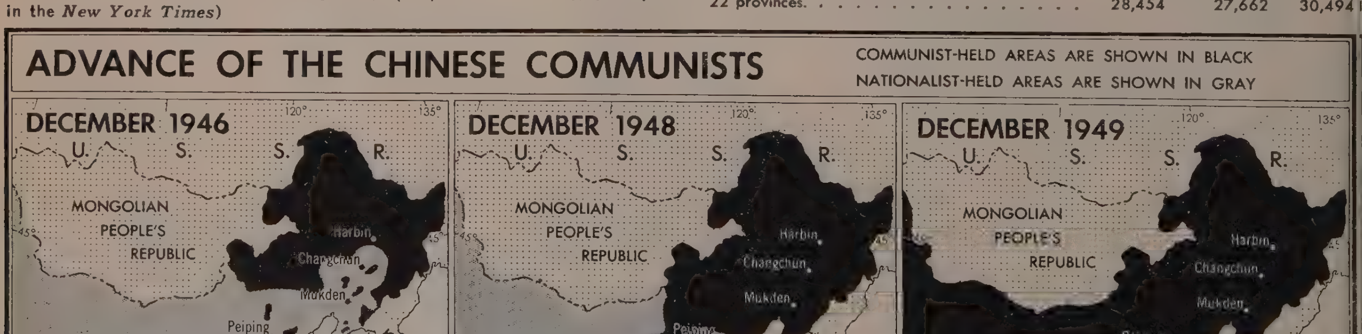

Table III.—*Estimated Products of Livestock and Poultry in China*

(In thousand heads)

Unit	1948	1947	1934–37 average
Hogs	59,510	53,758	60,675
Goats	13,976	13,609	19,695
Sheep	10,450	9,191	15,578
Chickens	209,335	196,743	265,860
Ducks	44,106	44,372	64,307

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Films of 1949.—*Journey to Kunming; The Chinese Peasant Goes to Market* (Gateway Productions, Inc.); *Peiping Family* (International Film Bureau); *Sampan Family* (International Film Foundation).

(H. T.Ch.)

Chloromycetin: *see* Chemotherapy; Medicine.

Chou En-lai

(1898–), premier and foreign minister of the Communist People's Republic of China, was born in Huaiyin, Kiangsu province. As early as 1919 he was imprisoned as an agitator among students. In March 1927 he helped organize workers who proclaimed a "citizens' government" in Shanghai, but Chiang Kai-shek later ordered the arrest of the Communists and sentenced their leaders to death, and Chou escaped and joined in the organization of the Chinese Red army. Throughout the early 1930s he worked for a united front against Japan. In 1936, when Chiang was kidnapped in Sian, Chou was largely responsible for his release. The united front which was later formed between the Communist forces and the nationalists was weak, however, and Chou was frequently an intermediary between the factions to discuss means of keeping civil war from breaking out anew.

Chou was the red representative at talks in 1946–47 with U.S. Gen. George C. Marshall, who sought futilely to end civil hostilities. He later charged that U.S. aid to Chiang was keeping the civil war alive. When the Communists in 1949 extended their control over most of China, Chou on Oct. 1 was named n Peking as premier and foreign minister of the new People's (Communist) Republic.

Christian Science.

Christian Science is a religion founded by Mary Baker Eddy and represented by the Church of Christ, Scientist, made up of the First Church of Christ, Scientist, in Boston, Mass., known as the Mother Church, and approximately 3,000 branches located throughout the world. There were also in 1949 more than 100 college and university Christian Science organizations formed in accordance with the by-laws of the Mother Church.

The Christian Science Church, which in 1948 purchased a building at Sixteenth and I streets, Washington, D.C., for the use of its Committee on Publication, opened in the building an exhibit officially called Christian Science World Activities on Display. The exhibit unfolded in chronological sequence the history of the Christian Science movement and included many unique features of architecture and display.

The Wartime Activities committee of the Mother Church continued in 1949 to help those facing the aftermath of World War II. Substantial quantities of food were supplied for distribution in Austria, Czechoslovakia, Finland, France, Germany, Great Britain, Greece, Hungary, Japan, the Netherlands and Poland. Clothing was sent to Great Britain, Germany, Norway, the Netherlands and elsewhere. Christian Scientists in the United States, Canada and England, interested in helping displaced persons to leave Europe and make new homes for themselves in other parts of the world, were aided by the Wartime Activities committee.

The work of the Christian Science Camp Welfare Activities t military and naval stations doubled during 1949. The Mother Church maintained 56 paid camp and hospital workers. In addition there were 214 volunteer workers who donated their services. Four Christian Science chaplains were assigned to stations with U.S. forces in Germany.

Full legal recognition for Christian Scientists to practice Christian Science and charge for their services was granted through legislation enacted in 1949 in Ohio, the last state in the U.S. to pass such a law.

Publications of the church, which are issued by The Christian Science Publishing society, include the *Christian Science Journal; Christian Science Sentinel; Christian Science Quarterly;* the *Herald of Christian Science,* published in seven languages and in Braille in English; and the *Christian Science Monitor,* an international daily newspaper.

Transcribed radio programs, originating in the Mother Church, were broadcast over more than 450 stations in the United States and territories, Canada, Panamá, Cuba, Bermuda, New Zealand and Australia. It was estimated that there were 10,000,000 listeners to these programs each week. (W. D. K.)

Christian Unity.

Christian unity movements which did not directly aim at the union of churches, but worked as leaven within the larger tendency, were notably accelerated during 1949. The system of state and local councils of Protestant churches had steadily grown until it included more than 700 organizations in the United States and about 200 in Great Britain. Their more recently adopted constitutions almost uniformly professed the ultimate ideal of church union.

United States.—Proposals, negotiations and preliminary steps looking toward actual ecclesiastical union were current among at least 7 important denominational groups in the United States, representing more than 12 actually participating denominations.

Congregational Christian-Evangelical and Reformed.—Following favourable action by the Congregational General council in 1948, the general synod of the Evangelical and Reformed Church voted its approval of the union of the two denominations, subject to the concurrence of 75% of the local synods. This was apparently assured by a previous popular vote which was favourable in the ratio of nearly 10 to 1.

Meanwhile the action of the special session of the Congregational-Christian General council in Feb. 1949, which declared the union effective on the basis of a 72% favourable vote of congregations, was challenged in the courts by an opposing minority. The matter was under adjudication at the close of the year but, pending court decision, it was anticipated that the formal union might be consummated in 1950. The title of the new body, the United Church of Christ, expressed the desire to draw in additional denominations and the matter was receiving formal attention from other bodies.

Presbyterian, North and South.—Long-continued negotiations between the two main branches of Presbyterianism resulted in a proposed basis of union which was under discussion at the close of 1949. Meanwhile the scope of the proposed union was enlarged in May 1949 by a vote of the Presbyterian General Assembly, U.S.A. (later concurred in by the Southern General assembly), inviting the United Presbyterian Church and the Reformed Church in America and "such other Presbyterians as may be willing," to consider a general reunion of churches of Presbyterian tradition.

United Presbyterian-Reformed Church in America.—Prior to the enlarged Presbyterian proposal, negotiations for union between these two bodies were well advanced. Joint sessions of their general assemblies were held in the spring of 1949, and a plan of union was sent down to their subordinate jurisdictions for action.

Northern Baptist-Disciples of Christ.—The commission on a projected union of these two churches reported in the Northern Baptist convention of 1949 that it did not propose going faster than the rank and file of the constituency would favour. It recommended that measures for cultivating closer acquaintance between Baptists and Disciples be continued and that a consideration of a basis of union be drafted, to be considered by the Northern Baptist convention in 1954 and voted upon by individual Baptist churches in 1955.

Meeting later in the year, the international convention of the Disciples of Christ approved the simultaneous meeting of the conventions of the two bodies in the same city in 1952 and the preparation of the basis of union, to be acted upon in 1954.

The 1949 session of the Northern Baptist convention by unanimous vote issued an invitation to all Baptist groups to confer with respect to union, including the bilingual and Negro Baptist churches.

Unitarian-Universalist.—The federal union of these two bodies was considered in their 1949 annual national meetings, held respectively in Portland, Ore., and Rochester, N.Y. They took identical action, referring to the vote of their congregations the question whether they would approve an official study of the possibility of such union. The action was carefully guarded, so as not to pre-judge the ultimate decision, assuming that the study was authorized.

Supplemental action indicated the purpose of including other liberal churches if the plan was approved.

"Crusade for a United Church."—The "Crusade for a United Church," led by E. Stanley Jones, and advocating federal union with the continuance of the existing denominations as subordinate units, was actively pushed in a nationwide series of meetings. A comprehensive movement initiated by the Congregational Christian and Disciples of Christ Churches and authorized to open conversations on the basis of organic union, received further development in a conference of official delegates representing eight interested denominations with about 16,000,000 members, held at Greenwich, Conn., in December. Their deliberations resulted in the formation of a permanent body titled "The Conference on Church Union," and the appointment of a committee to draft a unification plan "of such nature as to leave the door open to all Evangelical Christian bodies." Douglas Horton, general secretary of the Congregational Christian Churches, presided over the conference, and Bishop Ivan Lee Holt, of the Methodist Church, was elected president of the permanent organization.

Other Countries.—In Asia, unity movements within the younger Christian churches were numerous and significant, including developments or new negotiations in Japan, north and south India and Ceylon.

A complete scheme for the union of Anglican, Methodist, Baptist and Presbyterian churches in Ceylon, with the addition of a part of the United Church of South India which was located in Ceylon and which was to be transferred, was set forth by the authorized negotiators and was thought to be reaching the point of action.

In England, renewed conversations between authorities of the Church of England and the British Free Churches were authorized in 1947. A statement of agreements and points for further discussion was issued in early 1949. The statement reiterated that "the visible unity of the Church of Christ should be accepted as the final objective." Congregational-Presbyterian negotiations in Great Britain failed to reach agreement on a proposed organic union, but decided that the two churches should enter into "covenant relationship" which would identify them with one another spiritually and lay a ground for practical cooperation without constitutional union.

In July 1949 the Church of Scotland accepted an invitatio from the Church of England to examine the possibility of establishing intercommunion between the two churches through unification of the ministry.

Conversations underway in Australia for a number of year between the Anglican and Free Churches were stimulated by visit of the bishop of London in 1949. A proposal for the unification of the ministry at the parish level was under consideration, without raising at the moment the question of a commo episcopate.

(*See* also Religion.)

(H. P. D.)

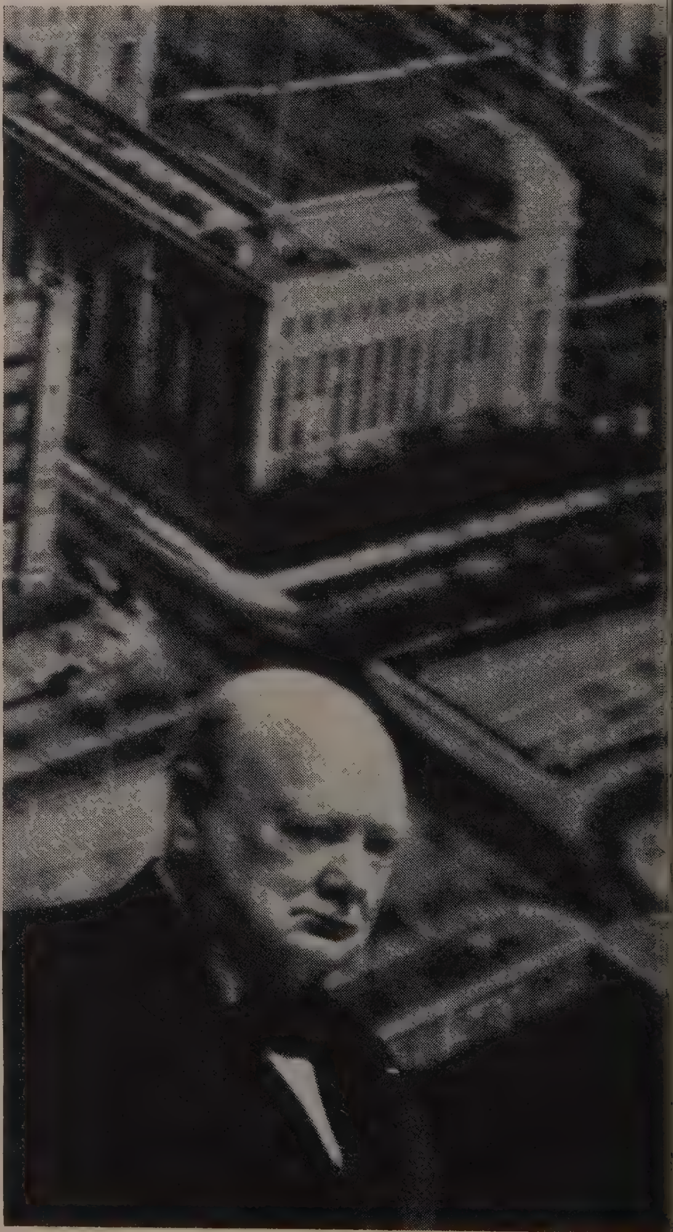
Chromium and Chromite: *see* Mineral and Metal Pro duction and Prices.

Chronology: *see* Calendar of Events, 1949, pages 1–16.

Churchill, Winston Leonard Spencer

(1874–) Britis statesman, was born at Blenheim palace, Oxfordshire, England

WINSTON CHURCHILL at the Boston Garden where he delivered the majo address at the Mid-Century convocation of the Massachusetts Institute o Technology, March 31, 1949. Behind him is a photomural backdrop of th institute



on Nov. 30, the elder son of Lord Randolph Churchill. For his biography and his political career during World Wars I and II, see *Encyclopædia Britannica.* After the defeat of his government in the general election of July 1, 1945, he led the Conservative opposition in the house of commons.

He attended the International Council of the European Movement in Brussels, Belg., in Feb. 1949 and on March 31 he spoke at the Mid-Century convocation of the Massachusetts Institute of Technology, Cambridge, Mass. In August he led the Conservative members of the British delegation at the first session of the consultative assembly of the Council of Europe at Strasbourg.

After the announcement of the devaluation of the pound on Sept. 18 he called for the summoning of parliament, and in the special debate that followed he moved a motion of no confidence in the government and again demanded a general election.

During the year the second volume of his memoirs of World War II, *Their Finest Hour,* was published. The first volume, *The Gathering Storm,* was published in 1948.

Church Membership. The latest information concerning church membership in 56 religious bodies in the United States, each reporting more than 50,000 members, was that published by the *Christian Herald,* New York city, in Sept. 1949 (*see* Table I). The total given for continental U.S. was 77,744,943 members, mainly for years ending in 1948, compared with 75,572,838 members reported by the same bodies the year previously. Some religious bodies do not compile and publish figures annually. In a few instances the latest data in the table are for the year 1936, the date of the last census of religious bodies taken by the federal bureau of the census. According to the official reports of the statisticians of the religious bodies, total church membership had been increasing for many years.

Church membership figures published in 1948 and 1949 represented the highest proportion of the total population ever reported in the religious bodies.

The Church of Christ, Scientist, is not included because the manual of that body forbids the numbering of the people and the reporting of such statistics for publication. The figures for the Disciples of Christ, the Evangelical Lutheran Church and the Evangelical United Brethren as given in 1947 represent corrections of those previously published. The figure for the Religious Society of Friends is for all Friends' denominations.

The religious bodies having more than 50,000 members had 97.4% of all the church members in continental United States, according to a compilation of the reports of 256 religious bodies, published in the *Yearbook of American Churches* (1945). The remaining 2.6% of the members were in more than 200 bodies. Of the total reported church membership in 1945, 32.3% was Roman Catholic, 1.3% Old Catholic, Polish Catholic and Eastern Orthodox, 6.4% Jewish and 60% Protestant. In 1945, mainly for the year ending in 1944, there were reported by 256 religious bodies 72,492,669 members, of whom 59,717,181 were 13 years of age and over. The *Christian Herald* estimated total church membership at 79,576,352 persons in 1949.

(B. Y. L.)

Table I.—*Church Membership in Continental United States, as Reported in 1949, for the Religious Bodies with More than 50,000 Members*

Body	Members 1949	Members 1948
Adventists, Seventh Day	222,619	215,545
Assemblies of God	273,147	243,515
Baptist Bodies:		
Northern Baptist Convention	1,583,360	1,541,991
Southern Baptist Convention	6,491,981	6,270,819
National Baptist Convention, U.S.A., Inc.	4,385,206	4,122,315
National Baptist Convention of America	2,580,921	2,580,921
American Baptist Association	245,861	245,861
Free Will Baptists	255,127	255,127
National Baptist Evangelical Life and Soul Saving Assembly of U.S.A.	70,843	70,843
Primitive Baptists	69,157	69,157‡
United American Free Will Baptist Church	75,000	75,000
Buddhist Churches of America	70,000	70,000
Church of the Brethren	185,799	184,584
Churches of God:		
Church of God	94,069	90,666
Church of God (Anderson, Ind.)	96,736	92,604
Church of God in Christ	340,530	300,000
Church of the Nazarene	213,188	209,277
Churches of Christ	682,172	682,172
Congregational Christian	1,184,661	1,157,764
Disciples of Christ	1,872,049	1,718,010
Eastern Orthodox Churches:		
Armenian Orthodox Church	110,000	18,787‡
Greek Orthodox (Hellenic)	300,000	300,000
Russian Orthodox	300,000	300,000
Evangelical and Reformed	714,583	708,382
Evangelical United Brethren*	707,326	700,413
Federated Churches	88,411	88,411‡
Religious Society of Friends	113,842	112,541
Independent Fundamental Churches of America	65,000	65,000
International Church of the Four-Square Gospel	66,611	56,197
Jewish congregations	4,641,000	4,641,000‡
Latter Day Saints:		
Church of Jesus Christ of Latter Day Saints	947,855	916,789
Reorganized Church of Jesus Christ of Latter Day Saints	128,849	127,381
Lutherans:		
American Lutheran Conference:		
American Lutheran	646,605	646,700
Evangelical Lutheran Augustana Synod of N.A.	422,646	408,565
Evangelical Lutheran Church†	757,352	720,286
Lutheran Synodical Conference of N.A.:		
Evangelical Lutheran Synod of Missouri, Ohio and other states	1,519,952	1,469,213
Evangelical Lutheran Joint Synod of Wisconsin and other states	288,355	288,355
United Lutheran Church in America	1,814,172	1,778,943
Lutheran Free Church	54,608	53,325
Mennonite Church	54,729	53,338
Methodist Bodies:		
African Methodist Episcopal	816,578	868,735‖
African Methodist Episcopal Zion	527,350	520,175
Colored Methodist Episcopal	381,000	381,000
Methodist	8,651,062	8,567,772
Pentacostal Church of God	68,000	37,048§
Polish National Catholic	250,000	250,000
Presbyterian Bodies:		
Cumberland Presbyterian	78,009	76,276
Presbyterian Church in the U.S.	638,652	613,701
Presbyterian Church in the U.S.A.	2,330,136	2,234,798
United Presbyterian Church of North America	205,677	202,605
Protestant Episcopal	2,228,270	2,160,207
Reformed Bodies:		
Christian Reformed	138,321	135,788
Reformed Church in America	178,356	178,318
Roman Catholic	26,075,697	25,268,173
Salvation Army	215,094	209,341
International General Assembly of Spiritualists	157,000	150,000
Unitarian	71,419	69,104
Totals:	77,744,943	75,572,838

Source: "Church Membership" *Christian Herald,* Sept. 1949.
*A merger of the Evangelical Church and the United Brethren in Christ, Nov. 1946.
†Name changed from Norwegian Lutheran Church.
‡As of 1936. §1944. ‖1942.

Table II.—*Estimated Membership of the Principal Religions of the World, 1949*

Religion	North America	South America	Europe	Asia	Africa	Oceania	Total
Total Christians:	122,439,577	93,544,440	308,664,782	30,546,864	28,692,175	25,505,443	609,393,281
Roman Catholic	69,941,249	91,301,768	114,450,059	14,113,672	14,062,805	18,356,243	322,225,796
Eastern Orthodox	1,208,157	...	112,447,669	8,106,071	5,868,089	...	127,629,986
Protestant	51,290,171	2,242,672	81,767,054	8,327,121	8,761,281	7,149,200	159,537,499
Jewish	5,211,736	544,975	3,920,100	917,500	639,500	35,000	11,268,811
Mohammedan	32,600	139,156	3,866,000	251,227,347	60,359,000	75,000	315,699,103
Zoroastrian	...	...	...	124,890	...	...	124,890
Shinto	...	...	...	25,000,000	...	...	25,000,000
Taoist	15,000	17,000	12,000	50,000,000	1,200	8,000	50,053,200
Confucian	85,000	95,000	50,000	300,000,000	7,500	52,000	300,289,500
Buddhist	165,000	135,000	...	150,000,000	...	...	150,300,000
Hindu	10,000	275,000	...	255,030,506	300,000	100,000	255,715,506
Primitive	50,000	1,000,000	...	45,000,000	75,000,000	100,000	121,150,000
Others or none	77,083,087	1,478,429	229,713,118	119,716,893	5,784,625	6,202,557	439,978,709
Grand total	205,092,000	97,229,000	546,226,000	1,227,564,000	170,784,000	32,078,000	2,278,973,000

Principal Religions of the World. — Statistics of the world's religions are very rough approximations only; that is, in China, one may be at the same time a Confucian, a Taoist and a Buddhist. Any separate statistics for the various groups can only be estimates. The same difficulty exists in Japan, where one may be both Buddhist and Shintoist. Aside from Christianity few religions, if any, make any attempt to keep statistical records; while even within Christianity, Protestants and Catholics employ quite different methods of counting members. All persons of whatever age who have received baptism in the Catholic Church are counted as members, while in most Protestant churches only those who "join" the church are numbered; however, outside of North America and Europe, the Protestant figures given in Table II represent the total Protestant Christian community. (C. S. B.)

Church of England.

On June 19, 1949, the fourth centenary of the publication of the Book of Common Prayer was celebrated in cathedrals and churches throughout the land. A picture paper, entitled *Your Prayer Book,* was issued by the Society for Promoting Christian Knowledge in an edition of 150,000 copies. The work on the building of Guildford cathedral also continued. The Interim report of conversations between representatives of the archbishop of Canterbury and of the Free Churches was published on March 31, signed by A. E. J. Rawlinson, bishop of Derby, and Nathaniel Micklem. It recorded complete agreement on the apostolic faith contained in the scripture and the creeds, and substantial agreement on the doctrine of the church and the function of the ministry. The function of the episcopate and other questions remained to be discussed. A scheme for the reorganization and amalgamation of the city churches was published in July. It allowed for the retention of 15 of the churches as parish churches, to be open for Sunday services, and for pastoral work among the resident population in the city as well as for existing lunchtime activities; and 21 ward churches were also retained, mainly for lunchtime work, thus leaving the incumbents free for Sunday duty and specialized evening work elsewhere in the diocese. The revenues of the benefices were to be centralized in a common fund and fixed stipends were to be paid to the rectors and vicars of ward churches.

A committee was appointed to consider the Lambeth resolutions concerning the Church of South India. Revision of the canon law was continued by both the convocations of Canterbury and York. The subjects dealt with in 1949 were: church festivals; the vesture of the clergy; the conduct of divine service and time of service in cathedrals and parish churches; the Holy Communion; sermons, the bidding prayer, hymns, anthems and church music; Holy Baptism.

The Benefices (Suspension of Presentation) measure, 1946, (amendment) received final approval by the Church assembly. The Reorganization of Areas measure, 1944, (amendment), restricting the rights of patrons in certain areas, was extended until 1954. Some other measures received general approval; and it was agreed to drop from the Bishops Retirement measure certain clauses concerning doctrine, ritual and ceremonial, leaving these matters to be dealt with by the convocations in the revision of the canons. The reports of several committees were received. It was agreed that the Report on Lay Evangelism be referred to the convocations, diocesan and ruridecanal conferences and parochial church councils; the suggestion was made that the ministry of works should take over disused churches of historical interest. A commission was appointed under Sir Walter Moberly to draw up resolutions on the relations between church and state, and a council on ecumenical co-operation was appointed to maintain relations with the World Council of Churches and the British Council of Churches. (A. J. MAC.)

Cigars and Cigarettes: *see* TOBACCO.

Cinnamon: *see* SPICES.

C.I.O.: *see* LABOUR UNIONS.

City and Town Planning: *see* TOWN AND REGIONAL PLANNING.

City Manager Plan: *see* MUNICIPAL GOVERNMENT.

Civil Aeronautics Administration.

During 1949 there was an improvement in the combined domestic and international air line safety record and a marked increase in the number of revenue passenger miles flown and freight carried by the scheduled air lines of the United States. There was a decline in the number of all types of pilot certificates issued and in the number of civil aircraft manufactured.

The combined accident fatality rate in 1948 for every 100,000,000 passenger miles of domestic and international flying by the scheduled air carriers was 1.3. The 1949 combined fatality rate was 1.0, the lowest in history. In domestic operations, the fatality rate was 1.3, the same as the 1948 rate. In international travel, the rate dropped from 1 in 1948 to 0 in 1949.

Revenue passenger miles flown by domestic and international scheduled carriers increased 12%, from 7,852,177,000 in 1948 to an estimated 8,800,000,000 in 1949.

Ton-miles of freight carried by both domestic and international scheduled carriers increased by an estimated 41% and ton-miles of express by 12%. Freight carried in international operations increased by an estimated 100%.

The total number of private, commercial and air line transport pilots increased from 491,306 as of May 1, 1949, to an estimated 510,000 at the end of the year. During 1949 an estimated 45,000 student pilot certificates were issued, a drop of 62% from 1948. Private certificate issuances totalling an estimated 30,000 were less by 65%; commercial certificate issuances totalling an estimated 7,300 were fewer by 10%; and air line transport pilot certificate issuances numbering an estimated 1,000 were less by 10%.

A marked increase in the number of women holding pilot and other airmen ratings was indicated by the first such inventory conducted by the CAA in nearly four years. The previous count as of July 1, 1945, showed only 5,122 women holding pilot certificates. The May 1, 1949, tally showed 9,678 women pilots, an 89% increase.

The number of civil aircraft manufactured numbered 3,565 compared with 7,302 in 1948, a decrease of 51%. Production of two-place models dropped 70%; of three-, four- and five-place models, 36%; more than five-place models, 37%.

The number of civil airports increased from 6,016 in 1948 to an estimated 6,100 in 1949.

Under the Federal Aid Airport program, as of Dec. 31, 1949, in the fourth fiscal year of the seven-year program, a total of 1,006 grant offers at 736 locations had been accepted by local sponsors, representing $92,126,435 in federal funds and approximately $98,000,000 in sponsors' funds.

International air transportation continued to expand, with four new United States flag air carriers certificated during the year, bringing the total to 24. Operations specifications were also issued to two new foreign flag air carriers, bringing the total in this category to 31.

Implementation of the 15-yr. master plan of all-weather air navigation and traffic control, known as the R.T.C.A. (Radio Technical Commission for Aeronautics) special committee report 31, proceeded rapidly during the year. By the end of Dec. 1949, 370 of the approximately 400 very high frequency radio ranges necessary to blanket the United States were in operation.

Weather delays were being overcome with the installation of

20 instrument landing systems, making a total of 94 such systems in operation at the close of 1949, and other improvements were in various stages of procurement and installation.

Importance was placed on the use of aircraft for industrial and agricultural purposes. The CAA was co-operating with the department of agriculture and Texas A. & M. College system in the development of an agricultural aeroplane. Approximately 2,000 waivers for such operations as dusting, spraying, seeding and fertilizing by air were issued by the CAA in 1949; reports were received of 262 towns and communities which were sprayed from the air for insect control.

At the CAA experimental station in Indianapolis, Ind., studies and tests of fire hazards were made to provide the latest technical data for the protection of fire in aircraft. (*See* also AIRPORTS AND FLYING FIELDS; AVIATION, CIVIL.) (D. W. R.)

Civil Liberties. Hysteria inspired by fear of communism seriously endangered civil rights during 1949, according to the American Civil Liberties union, which deplored the repressive measures advocated both by governmental and private agencies in an all-out campaign to drive Communists and communism from the United States. The proponents of strong-arm methods, however, replied that if communism were not destroyed, it would destroy civil liberties.

The antired fight was carried on through the purging of disloyal employees from government jobs; investigations of subversive activities by legislative committees; the passage of laws requiring loyalty oaths of public officials, including teachers; and attempts to outlaw the Communist party and Communist front organizations by statute and criminal prosecutions. Much criticism was evoked by the loyalty purge of federal employees, commenced in 1948, which resulted in the dismissal of about 83 out of 2,457,000 persons processed up to June, 1949.

The court of appeals of the District of Columbia ruled that freedom of speech does not include the right of a witness to maintain silence in hearings before legislative committees. The court affirmed the convictions of Dalton Trumbo and John Howard Lawson, two of ten Hollywood screen writers who had been held in contempt of congress for failure to say whether they were members of the Communist party.

Academic circles were torn by dissension over the right of members of the Communist party to retain teaching jobs, following the dismissal by the University of Washington of three professors for red affiliations. The civil rights of teachers were also at issue in court attacks on laws requiring them and other public officials to swear to their loyalty. Such laws were enacted during the year in Arkansas, California, Kansas, Maryland, New Jersey, New York and Washington, bringing the total of states with similar legislation to 26. None of the test cases reached disposition in courts of last resort.

The conviction of 11 leaders of the American Communist party for conspiring to advocate the overthrow of the federal government by force in effect outlawed the Communist party in the United States. Civil-liberties issues to be decided on appeal included the constitutionality of peace-time sedition laws, the applicability of the clear and present danger test to the defendants' activities and the freedom of conduct to be permitted defense counsel in such trials.

The U.S. supreme court by a 5 to 4 vote reversed the conviction of Rev. Arthur Terminiello for disorderly conduct in stirring up a demonstration by hecklers outside of the hall where he was making a fascist speech. The court ruled that no clear and present danger "of a serious substantive evil" had been shown. By the same narrow margin the court upheld a Trenton, N.J., ordinance banning the use of sound trucks which emit "loud and raucous noises." "To enforce freedom of speech in disregard of the rights of others would be harsh and arbitrary," the court said.

The damage to civil liberties caused by measures restricting freedom of expression was somewhat offset by gains to racial minorities through growing public tolerance, implemented by legislation and court decisions. Fair Employment Practices committee (F.E.P.C.) laws were enacted in Indiana, Massachusetts, New Mexico, Oregon, Rhode Island, Washington and Wisconsin. Court decisions included a Georgia supreme court ruling that counties with substantial Negro populations must put Negroes on their jury lists; a ninth circuit court order restoring U.S. citizenship to three former citizens of Japanese descent, who had renounced their citizenship under pressure of war hysteria; and the invalidation by the Oregon supreme court of a law barring Japanese aliens from owning or leasing farm land. New York's highest court, however, ruled that discrimination against Negroes by a housing project operated by an insurance company under a special statute was not a violation of constitutional rights.

(*See* also ALIENS; BIRTH CONTROL; EDUCATION; LAW; MOTION PICTURES; NEGROES, AMERICAN; NEWSPAPERS AND MAGAZINES; RADIO.)

Other Countries.—In Great Britain a ban was imposed on March 21, 1949, on political processions in the London area for a period of three months. A previous ban had expired on Feb. 6, but it was reimposed after disturbances with Communist supporters when members of the Union movement attempted to march through east London. The ban expired in June but was reimposed on Oct. 3 for another three months.

The "purge" in the civil service of persons known to be either Communists or fascists and whose duties were concerned with security remained in force. On Jan. 24 the prime minister, Clement Attlee, announced that, from the beginning of the "purge" in March 1948, 17 persons had appeared before the advisory committee. In ten of these cases the persons had been transferred to nonsecret work.

On Nov. 26 the constituent assembly of India adopted a constitution to become operative on Jan. 26, 1950. Part III dealt with fundamental rights. Included were rights of equality, such as the prohibition of discrimination on grounds of religion, race, caste or sex, the abolition of untouchability and freedom of speech; and rights relating to religion, affirming that all persons were equally entitled to freedom of conscience and the right freely to profess, practise and propagate religion.

The basic law (constitution) for western Germany, passed on May 8, contained provisions respecting civil liberties. The law guaranteed equal rights to men and women, and provided that nobody might be privileged or prejudiced by reason of sex, descent, race, language, home or origin, faith and religious or political beliefs. The right to assemble peacefully and unarmed, and to form associations and societies, was guaranteed.

On Sept. 29 the Argentine chamber of deputies passed a bill which regulated the party system. The legality of the existing parties was recognized but they were forbidden to form alliances for electoral purposes. The bill provided for the dissolution of parties endangering social peace, inciting to violence or having international connections. A new constitution was published on Jan. 11, and became operative on March 16. Rights of workers and of the family were guaranteed, but the right to strike was not granted.

Because of a coal strike in Australia, which broke out on June 27, the federal parliament on June 29 rushed through the Emergency Coal Strike bill, which forbade trade unions from using their funds for the continuance of the strike. The bill was retrospective from June 16, the date the miners balloted to strike.

On April 2 Great Britain and the United States presented notes to Bulgaria, Hungary and Rumania accusing them of repeated violations of the human rights clauses in the peace treaties. The three governments rejected the protests. The United Nations general assembly, on Oct. 22, adopted a resolution seeking the opinion of the International Court of Justice as to whether the human rights clauses of the peace treaties had been violated.

Civil Service. During 1949 over-all employment in the civil service of federal, state and municipal governments in the U.S. was on an essentially stable level. A slight increase in state and municipal employment occurred during the year, which was offset by a decline in federal employment. In the federal government, the number of employees fell below the level of the previous year largely because of cutbacks in the national defense program. At year-end, total civilian employment in the executive branch of the federal government was in the neighbourhood of 2,000,000, a decline of approximately 100,000 employees from 1948. State and local government employment averaged approximately 3,790,000 for the year, an increase of about 20,000 over the average for 1948.

Early in the year, a committee under the chairmanship of former Pres. Herbert Hoover advanced a series of recommendations for the betterment of personnel management in the federal government. One of the committee's recommendations, calling for reorganization of the United States civil service commission's administrative setup, was put into effect during the year. Congress also enacted legislation providing for a general overhauling of federal pay schedules. As a result of this legislation, employees in the higher brackets received substantial pay increases—the first upward extension of pay rates for top-level personnel in more than 20 yr. Many employees in the middle and lower brackets also received nominal pay increases as a result of the realignment of their pay schedules.

The general levelling off in living costs during the year was reflected in a comparative stability in pay levels for state and local government employees. Minor upward revisions were made in isolated instances, but for the most part pay rates remained substantially at their 1948 level. In Kentucky, a long-time provision in the state constitution limiting the salaries of public officials to a maximum of $5,000 was repealed and steps were taken to increase pay rates for employees in the upper brackets.

In general, the volume of applicants for public employment increased perceptibly during the year, a result of the decline in industrial employment. However, the supply of applicants for many professional and technical positions was still short of the demand.

During the year legislation was adopted in North Carolina providing for a comprehensive personnel program in the state government. In Georgia the existing state personnel system was expanded to embrace a large segment of highway employees, and an Illinois statute set up a civil service system for the state police department. In Memphis, Tenn., legislation was adopted placing city employees under a civil service system. The Arizona supreme court declared a newly adopted state civil service law to be unconstitutional shortly after the law was scheduled to become effective the first of the year.

In two states, New York and Illinois, major changes were made in previously existing veteran preference laws. In both instances, the revision resulted in giving veterans a lesser degree of preference in public employment than before. Veteran organizations in both states were among the groups backing the changes.

Legislation was introduced during the 1950 session of congress which would provide coverage for public employees under the federal old-age security system. The bill, which would permit states to participate on a voluntary basis, received favourable action in the house, but did not come up for a vote in the senate. (*See* also FEDERAL BUREAU OF INVESTIGATION.)

(J. J. DN.)

Great Britain.—During the latter part of 1948 the development of the social insurance schemes resulted in further additions being made to the staff of the British ministry of national insurance. At the same time responsibility for domiciliary assistance was transferred from local authorities to the National Assistance board, which took over about 1,700 staff with the work. These measures were, however, more than counterbalanced by reductions over a large part of the civil service. The major contributions came from the trade and industrial departments which made relaxations on controls and rationing. The ministry of labour also reduced its numbers. The net result of these changes was that the number of nonindustrial staff employed in the civil service fell from 715,000 in July 1948 to 697,000 in Oct. 1949.

The government accepted the recommendation of the committee on higher civil service remuneration for substantial increases in the salaries attaching to the senior posts in the service. The actual introduction of the new salaries, originally scheduled to begin in Oct. 1949, was deferred because of the worsening of the economic situation and the need for stabilizing wages and salaries generally. The year 1949 also saw the publication of the report of the Masterman committee on the political activities of civil servants, recommending complete political freedom for the first time to about 450,000 members of the industrial classes and of the minor and manipulative grades (mainly in the post office) while leaving about 450,000 members of the office grades from typists to senior administratives subject to the existing limitations. The government accepted the report but for the time being it was being put into effect only to the extent to which its recommendations conferred freedom from restrictions on the industrial classes and minor and manipulative grades.

(E. E. BS.)

Clark, Georgia Neese (1900–), treasurer of the U.S., was born on Jan. 27 in Richland, Kan. She studied at Washburn college in Topeka where she took her degree in 1921, and then followed a stage career with stock companies. In 1929 she married her manager George M. Clark; they were later divorced. She entered politics in 1930 in Richland, and became a leader of the Kansas Young Democrats. She became a member of the Democratic national committee in 1936, and was vice-president of the Democratic Midwest conference in 1947. At the same time, she successfully managed substantial banking and commercial interests which she inherited from her father in 1937, and her financial and political activities were culminated by the announcement by President Harry S. Truman on June 4, 1949, of her nomination as treasurer of the United States. She was unanimously confirmed as treasurer by the senate on June 9. On June 21 she took the oath of office, and then signed a receipt for $27,424,541,375.78 the amount of monies and government securities placed in her custody. Her signature, in facsimile, appears on all U.S. paper currency.

Clark, Thomas Campbell (1899–), associate justice of the U.S. supreme court, was born on Sept. 23 in Dallas, Tex. He studied at Virginia Military institute, Lexington, and at the University of Texas in Austin, and practised law in Dallas from 1922 until 1927. From 1927 to 1932 he was civil district attorney for

Dallas county. In 1937 he entered the U.S. department of justice, serving first as special attorney for the bureau of war-risk litigation and later in the antitrust division. In 1942 he was named co-ordinator of alien enemy control of the western defense command and chief of civilian staff for Japanese war relocation. He was named assistant attorney general in charge of the antitrust division, March 1943, and was in charge of the criminal division, Aug. 1943 to June 30, 1945, and then became attorney general of the U.S.

Early in 1949 he recommended drastic new antiespionage laws, sanctioning wire tapping and a lifting of the statute of limitations in espionage prosecutions, a reflection of congressional and court disclosures of the extent of Communist activity in the U.S. At Pres. Harry S. Truman's direction, he refused on June 1 to divulge to the senate judiciary committee certain files on foreign officials suspected of subversive activity, his grounds being that such a disclosure would be against public interest. On July 28 President Truman announced that he had asked Clark to take the position left vacant by the death of Associate Justice Frank Murphy of the supreme court. The appointment was confirmed by the senate and on Aug. 24 Clark was sworn in by Chief Justice Frederick M. Vinson.

Clay and Ceramic Products.

High production levels were maintained generally throughout the ceramic field in 1949. Most branches of the industry produced slightly below the record totals of 1948, although glass set new production records.

Structural Clay Products.—The structural clay field is largely dependent upon building activity, and during 1949 brick and tile manufacturers operated at capacity during most of the year to keep up with demand.

Modular sizes of structural clay products had been adopted by more than half the industry by the end of the year, as traditional sizes and shapes of brick and tile were replaced by the new standards, which were more in line with modern building design and engineering.

The first industry-wide research project to be projected in the structural clay field was started in 1949, with $1,250,000 pledged by manufacturers for a five-year program of research on structural clay products. Research objectives were larger, lighter-weight units, new colours in face brick and glazed brick and tile and new styles and shapes of products for better appearance and more economical construction.

Glass.—The glass industry in 1949 set production records because of great demand for flat glass, structural glass for new buildings, laminated glass for automobiles and for new products in several fields, although glass container production was somewhat lower than the previous year.

Cheap, lightweight glass beverage bottles designed to be thrown away when empty came into wide use during the year. Glass fibre products of new types, with the warmth and draping qualities of wool, were introduced. Television tubes were a rapidly growing market, with several new types introduced during the year making possible cheaper and longer-lasting tubes. A special glass was developed for television tube faces to make possible images of greater contrast in lighted rooms. Special structural and window glasses which filter out infra-red rays from sunlight were available for home and industrial windows.

Photosensitive glass, in which photographic images can be produced which will not fade and can be washed with water, became commercially available. The glass is exposed by the use of ultra-violet light and developed by baking at temperatures of from 580° to 650° C. (*See* also GLASS.)

Porcelain Enamel.—New applications and new types of porcelain enamels created wider markets for enamelled products during the year. Architectural porcelain enamel was widely used in new buildings, and the appliance and sanitary ware fields were sustained by home and industrial construction.

Research was carried out during the year on new types of enamels which require only one thin coat instead of the two heavy coats necessary with conventional types. The thin enamel coats are much more resistant to chipping, and can be used on quite flexible metal parts without chipping damage.

Kitchen appliances in several pastel colours were introduced during 1949, and porcelain enamelled steel in all colours was in wide use in architecture.

Refractories.—Supplying the steel, ceramic and other heavy industries, the refractories industry operated at high levels to fill demands caused by the general high level of manufacturing.

Results of research in adapting refractories to jet and rocket engine construction in several government projects were released during 1949. Refractory enamels were developed which, applied to few thousandths of an inch thick on metal parts, make the metal able to withstand temperatures several hundred degrees above their normal melting points for short periods of time. Cast refractory parts, such as turbine blades, were developed for jet aircraft engines, and can withstand heat and corrosive action destructive to metals and alloys.

Ceramic engineers at the government's atomic energy projects were working on the application of refractories to controlling the heat of atomic fission, but details were not released. It was known, however, that special refractories being studied had some of the highest known melting points, as well as a very high degree of chemical inertness.

White Wares.—The china and dinnerware industry fell below its postwar production peak in 1948, and the field of fine china was severely affected by the spring and summer business recession. Vitreous sanitary ware production was also hurt, but recovered strongly with increased building activity. Electrical and chemical porcelain manufacture reflected the generally high level of industrial production.

Automatic machinery of several kinds for making dinnerware was produced experimentally during the year, including presses for faster, automatic production of flatware and machines for applying handles to cups and similar pieces, which had traditionally been applied by hand.

Fine china for export was the major objective of the industry in England, and decorated ware was reserved for that market. New colours and shapes in semivitreous dinnerware were replacing the traditional designs in the United States, where the emphasis was on faster, lower-cost production of this ware.

Cement.—The cement industry was a chief supplier of the construction industries, with a resulting high level of production. Experiments were made during the year on the production of concrete brick, which imitated the colour and appearance of clay face brick. The use of prestressed steel reinforced concrete beams was introduced in the United States. Tests showed that such beams have much greater strength for their weight than conventional reinforced concrete.

FILMS OF 1949.—*Colour In Clay* (British Information Services); *Craftsmanship in Clay: Simple Slab Methods* (Educational Film Library Association, Inc.); *Mexican Potters* (Paul Hoefler Productions).

(C. S. PE.)

Cleveland.

Cleveland, O., had a population of 878,336 by the federal census of 1940 and an estimated population of 910,925 in 1948. Its area is 73.1 sq.mi.

Thomas A. Burke, Democrat, won his third consecutive elected term as mayor in the election of Nov. 8, 1949, defeating Franklin A. Polk, the Republican candidate and a member of the board of education, 158,198 to 78,211. The city council elected at the same time was made up of 20 Democrats, 10

Republicans and 3 independents. Voters rejected a proposed four-year term for mayor and councilmen but approved a county charter commission to modernize the Cuyahoga county government.

Earlier, in the October mayoralty primary election, voters had rejected a proposal to raise the mayor's salary by $5,000 annually but had approved a charter amendment which cleared the way for the city to obtain a large loan from the Reconstruction Finance corporation to construct a rapid-transit line on its municipally owned transit system. The 1949 city budget, $36,000,000, was the largest in its history.

Two new theatres were opened by nonprofit organizations. One was by the nationally known Play House group. This theatre, on Euclid avenue, was of revolutionary design and was the third one to be operated by the group. The other new theater was the Karamu, which was constructed by an outstanding Negro drama group.

Cleveland Public library employees were granted salary increases totalling $253,280. A six-day strike by transit workers starting just before Christmas left the city without public transportation. On Dec. 17 a $400,000 fire destroyed historic Central Market, which was owned by the city.

Electrical energy output in Cleveland in 1949 was about 4,000,000,000 kw.hr. Freight car loadings were about 350,000, down 20% from 1948, while unloadings were about 340,000, down 26%. Steel ingot tonnage produced in the Cleveland-Lorain district was 3,875,850, down 4% from 1948. On Dec. 1, 1949, the Cleveland Stock exchange went out of existence, becoming a part of the new Midwest Stock exchange in Chicago. Cleveland shares traded on the new exchange in December were 115,000 or more than had been traded on the Cleveland exchange in any month since Sept. 1939. (P. By.)

Climate: *see* METEOROLOGY.

Clothing Industry.

The clothing industry in the United States made further readjustments during 1949. Stocks fell in retail establishments as continued high prices made the carrying of large inventories unduly speculative. Based on dollar volume, sales approximated 1948, while unit sales were down. Labour costs did not decline, but overtime disappeared and in many factories the work week was reduced to three or four days. Piece goods prices fell somewhat in all fields. Imports of British woollens increased.

An important factor was the continued and increasing importance of synthetics in the men's-wear field. Rayon suitings increased in usage because of a price-conscious market. Technical difficulties in cutting, sewing and pressing were almost entirely resolved by the end of the year. The newest suitings on the market were nylon, with substantial production scheduled for 1950, particularly in the low price men's suit field. Blends of nylon and wool became of increasing importance.

The woollen industry was not unaware of the advance in synthetics. Despite a world-wide lack of wool that approached a shortage, the Wool bureau was formed to publicize the benefits of woollen fabrics for apparel. The woollen and cotton industries seemed to be pulling together to meet a common threat.

Research and development produced continued advances in machinery. Sales to countries outside the United States slackened as the dollar shortage became more acute. Domestic sales of industrial machines also tapered off, but new labour-saving devices promised aid to manufacturers beset with high labour and fabric costs. A six month's strike at the country's largest industrial sewing machine factory caused a temporary shortage of machines and needles but resumption of production in October alleviated the situation. Continued improvement and development of thread-trimming machines was of great importance. New developments on self-sharpening cloth cutters were noted. A new button sewing machine was marketed along with new label-sewing and waistband-edge binding machines. Regular, special and blind-stitch machines were available in new and improved models. New modern factories were erected in suburban and rural areas by the Reece corporation, famed for buttonhole machines, and the Willcox & Gibbs Sewing Machine company, longtime producers of straight and special sewers. The expansion of several highly specialized machinery manufacturers into new sewing machine fields pointed toward increased competition in the general machinery trade. New minor equipment included shock absorbing rests for sewing tables, an overhead conveyor system to carry finished work to the pressing and shipping rooms and new methods of making multiple markers and patterns. Much emphasis was placed on production and price control in the factory.

Style changes were more radical in what they promised rather than in what was achieved. Despite the fact that tie patterns moved toward the conservative, there was a definite indication of profuse colour and bold patterns in men's dress. Regular clothing manufacturers turned toward the simulated hand-stitch slip-stitch machine. Sportswear remained popular with the accent on fabric and colour. The Cuban Guayaberra began to move north from Miami. Men's suits continued the wide shoulder, big sleeve head, square hanging design of the previous year. New coverall and overall designs came into being. Continued cold weather clothing research went hand in hand with the expanded activity in the arctic and in high altitude aviation.

Women's wear featured the development of style merchandise at low income levels. Tailored clothes production slowed because of price resistance at consumer levels. Manufacturers and retailers covered an ever increasing portion of the consumer market with appealing advertisements of attractive, low cost fashions.

Labour made no special gains on the clothing front in 1949. Here and there an individual concern put in the guaranteed 50-work-week year, but in most cases management was skeptical.

Countries other than the United States and Canada continued to increase clothing production, reaching and surpassing prewar totals. Export shipments of machinery and equipment from the United States were only a very small part of the foreign orders booked, because of dollar shortages.

The outlook for 1950 was not clear. New styles and more colourful clothes were in the offing. Store inventories were low and prices were high. The trade was well aware that the 1949 dollar volume had been brought up to that of 1948 only because of a tremendous spurt in retail sales during the last three weeks of December. Competition was rife within the industry, causing sales-minded producers to add frills here and there while trying to meet a price market. Once again production efficiency, good styling and smart merchandising were determining factors—the era of open competition had returned.

(S. L. S.)

Cloves: *see* SPICES.

Coal.

World production of coal in 1947 surpassed the 1939 level and followed with a 2% increase in 1948. Table I shows the outputs of the major producing countries, along with the estimated world production.

Nearly all of the important European producers except Germany had regained their prewar level of operation, and in several cases had surpassed it by a considerable margin. Most of the countries for which partial 1949 data are shown in Table I reported outputs ahead of the 1948 average, but not by a

Table I.—*Coal Production of the World*

(Millions of short tons—all grades)

	1943	1944	1945	1946	1947	1948	1949*
Canada	17.86	17.03	16.51	17.81	15.87	18.44	15.18†
Jnited States	650.82	683.27	630.93	592.51	687.81	656.65	433.33‡
elgium	26.17	14.91	17.45	25.11	26.89	29.41	22.64§
Czechoslovakia	56.49	54.31	29.84	37.01	42.53	45.56	39.33†
rance	46.77	29.30	38.60	54.34	52.16	49.75	43.54§
Saar	?	?	?	8.69	11.56	13.85	11.49§
Germany	456.50	403.60	164.22	251.95	271.49	294.41	?
lungary	13.97	10.42	4.73	7.00	9.71	11.68	5.18‖
taly	3.63	1.22	1.68	2.98	3.54	2.16	1.59§
letherlands	14.28	9.48	5.80	9.77	11.66	12.47	9.72§
oland	100.70	96.33	30.17	53.07	70.43	82.98	56.56¶
pain	11.69	12.88	13.32	13.33	3.08	12.81	9.83§
Jnited Kingdom	222.79	215.88	204.71	214.81	221.14	233.44	197.35†
J.S.S.R.	145?	130?	160?	178?	193?	220?	?
China	69?	69?	18?	17?	22?	10?	?
ndia	28.66	29.26	32.67	33.27	32.45	33.94	26.01§
South Africa	22.66	24.91	25.47	25.63	26.25	25.97	17.94¶
ustralia	21.60	20.99	20.93	21.96	23.48	24.71	17.04§
Total	2,018	1,935	1,487	1,629	1,821	1,862	?

*Incomplete data. †10 months. ‡11 months. §9 months. ‖5 months. ¶8 months.

sufficient margin to offset the sharp decline in the United States.

United States.—The salient features of the coal industry in he United States are presented in Table II, while Table III hows the distribution of the output by states.

Table II.—*Data of the Coal Industry in the United States*

(In thousands of short tons)

	1943	1944	1945	1946	1947	1948
roduction, total	650,821	683,278	632,551	594,429	687,814	656,658
Anthracite	60,644	63,701	54,934	60,507	57,190	57,140
Soft coals	590,177	619,576	577,617	533,922	630,624	599,518
Bituminous	587,428	617,022	574,949	536,254	627,750	596,432
Lignite	2,749	2,554	2,668	2,668	2,874	3,086
nthracite						
Open-cut	8,989	10,953	10,056	12,859	12,603	13,353
Underground	51,654	52,748	44,878	47,648	44,587	43,787
Used locally	6,608	6,061	6,391	6,398	6,138	6,657
Shipped	54,036	57,641	48,542	54,109	51,052	50,483
Exports	4,139	4,180	3,691	6,507	8,510	6,676
Imports	166	12	0.1	10	10	1
Stocks	329	445	130	251	702	964
Consumption	57,100	59,400	51,600	53,900	48,200	50,200
ituminous and lignite						
Open-cut	79,685	100,898	109,987	112,964	139,395	139,506
Underground	510,492	518,678	467,630	420,958	491,229	460,012
Used locally	5,252	5,258	5,102	4,415	?	?
Shipped	584,925	614,318	572,515	529,507	?	?
Exports	25,836	26,032	27,956	41,209	68,667	45,925
Imports	758	634	467	435	290	291
Stocks	62,359	63,401	50,751	52,783	57,787	76,662
Consumption	596,164	591,830	559,567	500,352	557,243	536,672
Railroads	130,283	132,049	125,120	110,166	109,296	94,838
Coke ovens	102,460	105,296	95,349	82,999	104,800	107,299
Power utilities	76,403	78,887	71,603	68,739	86,009	95,686
Steel mills	11,238	10,734	10,084	8,603	10,048	10,046
Cement mills	5,851	3,789	4,215	6,969	7,938	8,464
Other industrial	147,165	136,169	131,391	122,290	139,989	125,081
Retail dealers	122,764	124,906	121,805	100,586	99,163	89,747

The 1947 coal output surpassed that of all previous years, even the war peak of 1944, but the 1948 output was reduced nearly 5% by a strike over the unsettled work contract in the ituminous fields.

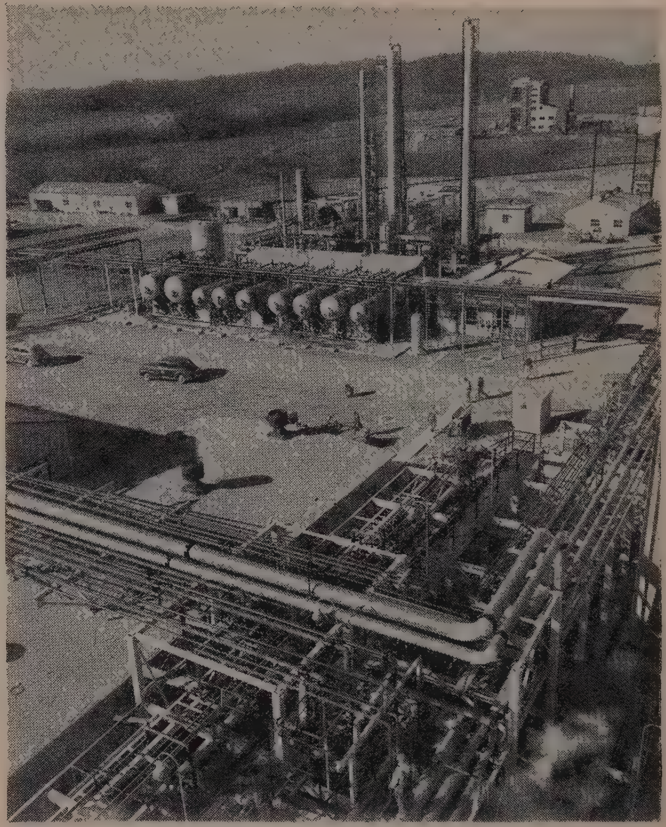
The reduced output was offset by a sharp decline in exports n the second half of the year, and by a cut of 4% in consumption.

Table III.—*United States Production of Coal, by States*

(Millions of short tons)

	1942	1943	1944	1945	1946	1947	1948
labama	19.3	17.2	18.8	18.2	16.2	19.0	18.8
Colorado	8.1	8.3	8.2	7.6	5.9	6.4	5.6
linois	65.1	72.6	76.8	73.0	63.5	67.9	65.3
ndiana	25.4	25.1	28.0	25.2	21.7	25.4	23.8
entucky	62.2	63.2	71.4	69.6	66.6	84.2	82.1
Dhio	32.8	32.3	33.9	32.7	32.3	37.5	38.7
ennsylvania	144.1	141.0	146.1	133.0	125.5	147.1	134.5
ennessee	8.2	7.2	7.3	6.3	5.6	6.3	6.5
tah	5.5	6.7	7.1	6.7	6.0	7.4	6.8
irginia	20.1	20.3	19.5	17.2	15.5	20.2	18.0
Vest Virginia	155.9	158.8	164.7	152.0	144.0	176.2	168.9
Vyoming	8.1	9.2	9.5	9.8	7.6	8.1	6.4
Dthers	27.9	28.3	28.3	26.2	23.5	24.9	26.9
Total Bituminous	582.7	590.2	619.6	577.6	533.9	630.6	599.5
nthracite	60.3	60.6	63.7	54.9	60.5	57.2	57.1
Grand Total	643.0	650.8	683.3	632.6	594.4	687.8	656.6

Work stoppages or restrictions were rampant in the industry n 1949, and production suffered accordingly. Up to Dec. 3, 949, the bituminous output totalled 394,988,000 tons and the nthracite output 40,386,000 tons, a total of 435,374,000 tons—9% less than the total for the corresponding period of 1948.



ONE OF TWO EXPERIMENTAL PLANTS for converting coal into oil, which were dedicated at Louisiana, Mo., in 1949. The first of their kind in the U.S., both plants were to be operated by the U.S. bureau of mines

Canada.—Coal production in Canada increased from 15,868,866 short tons in 1947 to 18,435,799 tons in 1948, and to 15,183,584 tons through Oct. 1949, as compared with 14,717,487 tons in the corresponding period of 1948. Imports rose from 30,564,129 tons in 1947 to 31,049,632 tons in 1948, but dropped sharply in 1949, the total through October being only 17,036,638 tons. (G. A. Ro.)

Great Britain.—During its first year of operation the National Coal board accounts showed a deficiency of £23,255,586 but during 1948 this was improved to a surplus of £1,651,965.

The forecasts made for coal production in 1949 were 202,000,000 to 207,000,000 tons of deep-mined coal and 13,000,000 tons of opencast coal. Actual production reached 215,113,800 tons, made up of 202,674,100 tons of deep-mined and 12,439,700 tons of opencast coal. This compared with production in 1948 of 208,400,000 tons, made up of 196,700,000 tons deep-mined and 11,700,000 tons opencast. Export and bunker coal reached 19,330,000 tons in 1949.

Before nationalization a mine which showed repeated losses over a period was closed regardless of social obligations and the loss of capital. Under nationalization the problem acquired a new aspect. The unprofitable mines must be closed but equally the mining personnel must be preserved. To achieve this object a plan was being operated successfully in Scotland where some 8,000 to 9,000 miners with their families were being transferred from the nearly exhausted coalfields of central Lanarkshire to the richer coalfields of Ayrshire and the Forth basin. The completion of the whole scheme would take 15 to 20 yr. but already 1,200 miners from eight abandoned collieries in Lanarkshire were working in the more profitable areas of Fife, Stirling and the Lothians of Scotland. To encourage migration the National Coal board guaranteed a house to every married man who was transferred and paid the fares and household removal expenses for him and his dependents.

When coal mines were nationalized £1,642,000,000 was allocated for division among 21 coal mining districts as compensation for loss of property. The district allocations from this total were announced during the year and steps were taken to divide these sums between the various colliery companies in each district. Considerable difficulty was likely to arise in view of the fact that the owners' total claims were said to amount to 50% more than the sum allocated.

In 1949 the National Coal board for the first time was subjected to open criticism in parliament. The debate was disappointing. Several admissions were made, namely that the output target had not been reached and it was suggested by the opposition that the reasons were a falling off in recruitment, the low output per man shift at the face (although this tended to rise slightly during the latter part of the year) and the amount of voluntary absenteeism.

During the year the organization of the National Coal board was subjected to criticism by Sir Charles Reid, the chairman of the Reid Report committee and a former member of the board itself. His main points were: (1) the National Coal board should confine its activities to matters of policy and give the local directors full executive control in their own areas; (2) in spite of 80% mechanization, the output at the coal face was still about three tons a manshift, about the same as in 1939 when only 56% of the faces were mechanized; (3) nationalization had not drawn from the men any greater effort than did the system of free enterprise; (4) the present impersonal system of administration did not satisfy the workmen.

Australia.—Production of hard coal in Australia in 1948 amounted to 15,060,000 metric tons, or an average output of 1,255,000 tons a month. The year 1949 started badly with the output down to 770,000 tons in January but by May it had risen to 1,489,000 tons. The effects of the disastrous coal strike remained to be assessed. This strike led to further important developments in the mining of brown coal and lignite in open-cast workings and these fuels played an increasingly important part in the internal economy of the British Commonwealth of Nations.

India.—The total output of coal in 1948 was 15,060,000 metric tons (including 240,000 tons from Pakistan). Production had remained at a nearly steady level after 1939 but during the period from January to May, 1949, there was a small increase; the average monthly output being 2,718,600 tons compared with 2,525,000 tons during the corresponding period in 1948.

Northern Rhodesia.—Joint exploration of this territory by the government, the British South Africa company and the copper companies of Northern Rhodesia was being carried out with the view to developing any suitable coal deposits that might be found.

Southern Rhodesia.—There had been a steady increase in the coal output for many years to meet the industrial and domestic needs of a growing population. In 1948 the total output was 1,704,000 metric tons or an average of 142,000 tons a month. It was still going up and in Aug. 1949 amounted to 164,800 tons. This was not enough to meet the rapidly rising demands of the two Rhodesias. Wankie colliery was expected soon to increase output materially.

Union of South Africa.—Production remained practically constant during the last four or five years in the Union. The total output in 1948 was 24,024,000 metric tons and during the first seven months of 1949 it remained at practically the same level.

Films of 1949.—*Coal Country* (Flory Films, Inc.). (J. A. S. R.)

Coast and Geodetic Survey, U.S.

During the year 1949, the major
activities of this bureau of the department of commerce o
curred in the territory of Alaska. Hydrographic surveys we
accomplished by six survey ships, two of which operated as co
bined expeditions in the western Aleutian Islands and adjac
areas of the Pacific and the south Bering sea. The remaini
ships performed hydrographic surveys in the uncharted wat
of Bristol bay, along the south side of the Alaska peninsula,
Prince William sound and in southeast Alaska. The coastal ar
of Alaska from the Alaska peninsula northward along the shor
of Bering sea into the Arctic was delineated by aerial phot
graphic parties. Geodetic control was established in connecti
with this work and extended into the lower Yukon river valle

Hydrographic surveys were extended along the Atlantic a
Gulf coasts, in the Columbia river and in San Francisco bay.

Electronic equipment was used by the survey ships in the o
shore work in Alaska and in the Gulf of Mexico. Continu
improvement had been made in the use of this equipment f
the definite location of the soundings obtained in these survey

A tidal program covering observation of sea tides was co
tinued throughout the year at 132 ports along the Atlanti
Gulf, Pacific, Alaska and South American coasts. Predictio
of times and heights of the tides were published from the da
collected.

The basic network of horizontal and vertical control w
extended during 1949 in a number of states to provide fund
mental data for determining the topography of the countr
under the national mapping program and for the planning
large-scale engineering projects proposed for flood control, re
lamation and other water-use developments in the Misso
river valley.

At six observatories in the United States and its possessio
continuous photographic records were obtained of daily a
annual changes in the principal magnetic elements. Field ma
netic surveys furnished data on the distribution of secul
change in the United States.

By means of seismograph stations, maintained by the burea
in western states, seismic areas were mapped and earth shoc
located. Through co-operation with universities and private i
stitutions operating other seismographs, epicentres of 120 eart
quakes were located.

In the publication of nautical charts for the mariner, add
tional charts were made available for Loran navigation and f
inland transportation on the Gulf Intracoastal waterway. T
regular series of nautical charts of the coast was augmented b
additional charts from data furnished by survey ships.

New aeronautical charts were published for use with hig
frequency air navigation facilities and for simplifying traf
control problems at major air terminals. The regular series
aeronautical charts used by the navigator for contact flying, f
instrument navigation and for approach and landing were co
tinued with revisions of data as needed to show accurate exis
ing conditions of the facilities and the terrain.

The bureau continued its participation in the programs
the state department for the rehabilitation of the Philippin
and for the co-operation with the American republics in trai
ing technicians in the fundamental work of the bureau. (*S*
also Cartography; Geography; Oceanography.) (L. O. C.)

Coast Guard, U.S.

During the fiscal year 1949 the coa
guard saved the lives of 5,423 perso
in a series of rescues. During January the cutter "Owasco," o
ocean weather station, assisted a Danish motor vessel in troub
60 mi. southwest of Cape Farewell, Greenland, and brought h
safely into Ivigtut, Greenland. During the same period th
cutter "Taney," on Pacific ocean weather station, towed a di
abled U.S. vessel to the Farallon Islands. While the cutt

"Duane" was returning from an Atlantic ocean weather station in March, a chief pharmacist's mate went aboard a trawler, 210 mi. off Boston, Mass., and saved the life of a man with a badly mangled limb. The cutters on all nine and one-half weather stations had 15,361 radio contacts from passing trans-ocean planes, made 47,803 weather reports and rendered assistance in 27 cases.

Many other rescues were effected. In April the cutter "Sebago," which was on ocean weather patrol in mid-Atlantic, guided a distressed transatlantic air force C-47 plane to a night landing in the water alongside the vessel and took off the four-man crew before the plane sank. In June, the lighthouse tender "Bramble" and two station boats went to the rescue of 81 persons on a C-46 plane that crashed off Point Salinas, ten miles off San Juan, Puerto Rico, en route to Miami, Fla. Twenty-two survivors were taken from small islands and rocks and six others from the water. In July, the cutter "Perseus" removed 22 crew members from a Greek vessel hard aground near Point Arguello, Calif. In August, the "Casco" found a trawler with decks awash and six crew members in dories 28 mi. southwest of the Lurcher shoal, Mass., light vessel. The cutter pumped her dry and towed her to Gloucester, Mass.

The coast guard's 79 aircraft included 10 helicopters and were based on nine air stations circling the coasts from Salem, Mass., to Port Angeles, Wash. In January, a helicopter from Elizabeth City, N.C., rescued the pilot of a crashed marine corps F4U by means of a mechanical hoist. Shortly before, two navy pilots had been picked out of the ocean off San Francisco, Calif., by coast guard PBM's, one pilot being in the water only 11 min. In February, a PBY directed a coast guard boat to a large yacht in distress off the Anclote Keys, Fla. During the March floods which isolated the Neah Bay, Wash., district, aircraft from Port Angeles Air station carried 37 passengers, 3 medical cases, Red Cross personnel and about 18,000 lb. of supplies from and to the area. In April, a PBM from San Francisco landed at sea 750 mi. offshore and removed a peritonitis case from an army transport to a hospital ashore. In May, a Port Angeles helicopter evacuated two Canadian flyers who had crashed in almost inaccessible mountainous country. One seaman on the cutter "Mendota," 80 mi. off Norfolk, Va., with acute appendicitis, and another on the cutter "Unimak," 60 mi. off Cape Henry, Va., with a steel particle in his eye, were removed in July by helicopters from Elizabeth City air station, using electric hoists, and transferred to shore hospitals. In November, a PBM guided the cutter "Travis" to a yacht sinking 150 mi. off Savannah, Ga. The cutter put pumps aboard to reduce the water level and towed her to Charleston, S.C.

In April the icebreaker "Mackinaw" assisted in refloating a grounded steamer in the Great Lakes, during the annual ice-breaking activities that help expedite commerce at the opening of the navigation season. Her helicopter, meanwhile, evacuated to a shore hospital a crew member of the grounded steamer.

The icebreaker "Northwind," while conducting the annual Bering Sea patrol, assisted the Point Barrow Supply expedition whose navy icebreaker had lost a propeller.

For the first time since it was inaugurated in 1912, after the sinking of the "Titanic" by collision with an iceberg, the International Ice patrol, operated to warn transatlantic liners of menacing icebergs, was conducted entirely by coast guard planes. An oceanographic survey and an iceberg census followed, using both air and surface craft.

Loran networks extending from Greenland to Tokyo, Japan, enabled air and surface navigators to determine their positions at all times regardless of weather conditions. These supplemented 37,309 other aids to navigation, ranging from wooden spar buoys to light stations and lightships.

THE PEASE CRADLE, an air-hoist crane system for lifeboat launching, shown in a test demonstration by U.S. coast guardsmen in 1949. Under this system, lowering time was cut to as little as 5 sec. as against 30 sec. to 2 min. by conventional methods

In the enforcement of safety laws on the high seas and navigable waters of the United States, 13,693 motorboats and yachts were boarded and 3,030 violations of navigation and marine inspection laws were reported. There were 6,630 annual inspections of merchant vessels which insured greater efficiency and safety. The principal activities of marine inspectors embraced 5,590 dry dock examinations, 2,880 reinspections and 27,825 miscellaneous inspections of merchant vessels. Numbers were assigned to 446,108 motorboats. Merchant marine personnel were issued 101,830 documents, including officer's licences and seamen's certificates. Merchant marine units in the principal domestic ports and details in London, Eng., Bremerhaven, Ger., Naples, It., Trieste and Piraeus, Gr., investigated 6,931 cases of negligence, incompetence and misconduct, 804 of these cases being heard by civilian examiners.

There were 1,984 commissioned coast guard officers at mid-year, 284 chief warrant and 502 warrant officers, 294 cadets and 20,484 enlisted men. The 740 salaried civilians at headquarters and 1,335 in the district were augmented by 2,607 wage board employees and 700 lamplighters.

With a membership of 13,276, the coast guard auxiliary, owning 5,987 boats, 224 planes and 185 radio stations, conducted courtesy motorboat inspections, engaged in rescue work, afforded small boat seamanship training for nonmembers and maintained safety patrols for regattas and marine parades.

In active commission there were 180 cutters, 48 patrol boats, 37 lightships, 39 harbour tugs and 10 buoy boats. Among smaller craft there were 178 motor lifeboats, 1,381 motorboats and 2,329 nonpowered craft aboard ships and at shore installations.

In addition to the 9 air stations, authorized shore units included 12 bases, 41 depots, 171 lifeboat stations, 440 manned light stations, 79 light-attendant stations, 34 Loran transmitting stations, 49 marine inspection offices, 11 primary radio stations and 2 supply depots.

The coast guard yard repaired and maintained the larger cutters and built small boats.

After completing the four-year course at the Coast Guard academy at New London, Conn., 54 cadets were commissioned as ensigns, and 700 enlisted men were in training each month at the Groton Training station, Groton, Conn., to qualify themselves for higher ratings.

Public law 207 was enacted by the 81st congress. This codified, revised and enacted into positive law title 14 of the U.S. code, and provided for the first time a clear, concise statutory statement of the duties and functions of the coast guard.

(J. F. Fy.)

Cobalt: *see* Mineral and Metal Production and Prices.
Cochin-China: *see* French Union.

Cocoa

(Cacao). World production of cacao beans for 1949–50 was forecast at 1,571,170,000 lb., compared with 1,650,303,000 lb. in 1948–49 and the 1935–39 average of 1,579,000,000 lb. The African crop, about two-thirds of the total, was estimated at only 1,008,000,000 lb., compared with 1,124,000,000 lb. in the previous year. The decrease was mostly the result of too much rain and damage by disease. The Gold Coast production was estimated at 540,000,000 lb., compared with 623,152,000 lb. in the previous year, and Nigeria 200,000,000 lb., compared with 241,584,000 lb. in 1948–49. South American production of 409,000,000 lb. exceeded the 388,543,000 lb. of the previous year.

The quantity of cacao beans imported into the U.S. increased about 6% from 563,000,000 lb. in 1947–48 to 596,000,000 lb. in 1948–49, but the value of imports declined about 8% to $158,000,000.

During the year prices fluctuated sharply at levels well below the 49 cents per pound peak of 1947, ending 1949 at the 22 to 23 cents level.

(J. K. R.)

Coffee.

Consumption of coffee in the U.S. in 1949, all from imported supplies, was estimated at 17.8 lb. per capita, compared with 18.9 lb. in the previous year, and 14 lb. as a prewar average (1935–39). Imports of raw coffee beans into the U.S. totalled 20,946,793 bags in 1948 and during the first nine months of 1949 were running 7.7% higher than for the same months of the previous year. Europe, which consumed about 12,000,000 bags per year prewar, used only 8,000,000 in 1948.

World coffee production for the 1949–50 crop year, according to early season forecasts for the main producing countries, was expected to equal 38,002,000 bags, compared with 40,492,000 bags in 1948–49 and an average of 43,220,000 bags for the period 1935–39. Brazil was expected to produce only 19,727,000 bags, compared with 22,348,000 bags in the preceding year. The Colombian crop was estimated at 6,140,000 bags, the same as the preceding year, but about 40% higher than prewar. The African crop was expected to be 4,088,000 bags, compared with 3,834,000 bags in the previous year. Prospects in the Netherlands Indies were favourable for a crop 10% larger than that of the previous year, but only about one-fifth as large as prewar. The estimated crop of Guatemala of 980,000 bags was down from 1,140,000 bags in 1948–49.

In the face of continued strong demand in North America and western Europe, world total exportable supplies dwindled to an estimated 28,674,000 bags, compared with 31,364,000 bags in 1948–49 and about 36,000,000 bags prewar. Trading in coffee futures in 1949 on the New York coffee and sugar exchange amounted to 8,922,750 bags, largest since 1937, compared with 3,633,750 bags in 1948. Dwindling supplies and consumer hoarding, spurred on by newspaper headlines, were reflected in coffee prices on the exchange; prices which had stood at 20 cents per pound in April, reached more than 52 cents in November. (*See* also Brazil.)

(J. K. R.)

Coinage.

The three U.S. coinage mints located at Philadelphia, Pa., San Francisco, Calif., and Denver, Colo., manufactured a total of 987,627,226 domestic and foreign coins during the government fiscal year 1949.

U.S. coin production was valued at $51,779,863 and consisted of the following denominations:

Denomination	Number of pieces produced
Half dollars	6,782,826
Quarter dollars	70,402,400
Dimes	179,925,000
Five-cent pieces	156,347,000
One-cent pieces	497,800,000
Total domestic	911,257,226

The composition of the half dollars, quarter dollars and dimes was 90% silver and 10% copper; five-cent coins, 25% nickel and 75% copper; and one-cent coins, 95% copper and 5% zinc and tin in conformity with U.S. coinage laws.

Foreign coinage during the fiscal year 1949 totalled 76,370,000 pieces of various denominations and alloys for the governments of China, Cuba, Dominican Republic, Mexico, Saudi Arabia and Venezuela.

In addition to the coinage mints, four other mint service institutions comprising the bureau of the mint were in operation in 1949—the assay offices at New York city and Seattle, Wash.; the gold-bullion depository at Fort Knox, Ky.; and the silver-bullion depository at West Point, N.Y. The entire mint service is administered by the director of the mint, with offices in Washington, D.C.

The principal functions of the bureau of the mint, other than the manufacture of domestic and foreign coins, include the safeguarding of the government's holdings of monetary metals, valued at billions of dollars; acquisition of gold and silver bullion; the refining of gold and silver; administration of the issuance of treasury licences for the acquisition, ownership, possession, use and exportation of gold for industrial, professional and artistic purposes; the manufacture of medals for the armed services and the manufacture of medals of historic interest for sale to the public.

At the close of the government fiscal year 1949 the mint institutions held in their custody approximately 24,000 tons of gold bullion valued at $24,466,165,743; and approximately 36,600 tons of silver bullion valued at more than $1,000,000,000.

(N. T. R.)

Coke.

In general, world production of coke had not only recovered to its prewar level but most countries had surpassed their war peaks. Germany was the chief delinquent; there were smaller deficiencies in Japan and Belgium. The out-

Table I.—*World Production of Coke*

(Thousands of short tons)

	1943	1944	1945	1946	1947	1948
Australia	1,772	1,562	1,188	1,194	1,479	?
Belgium	4,862	2,257	2,071	2,646	3,380	4,116
Canada	2,987	3,438	3,333	2,857	2,973	3,435
Czechoslovakia	4,497	4,991	2,095	2,480	4,238	5,758
France	5,500	3,206	3,009	5,677	6,451	6,785
Germany	58,159	58,863	?	10,755	17,807	20,763
Great Britain	16,186	15,771	15,664	15,665	15,473	17,178
Poland	3,583	5,009	1,921	3,668	4,545	5,136
India	1,740	1,827	43	?	?	?
Italy	2,200	602	?	?	1,793	2,517
Japan	4,954	4,144	?	?	1,283	2,130
Netherlands	2,385	1,737	?	?	1,684	3,125
U.S.S.R.	8,599	10,929	14,300	16,000	?	?
United States	71,676	74,037	67,308	58,498	73,446	74,861
Total	191,500	184,600	124,200	127,700	159,100	176,900

puts of the important producers and the world totals during the past several years are shown in Table I.

United States.—A new record high was reached in coke production in the United States in 1948. The most important features of the industry, as reported by the U.S. bureau of mines, are shown in Table II.

Table II.—Coke *Production* in U.S.
(In thousands of short tons)

	1943	1944	1945	1946	1947	1948
Production	71,676	74,038	67,308	58,498	73,446	74,862
By-product	63,743	67,065	62,094	53,929	66,759	68,284
Beehive	7,933	6,973	5,214	4,568	6,687	6,578
Breeze made	4,941	5,116	4,721	4,308	5,602	5,874
Coal charged	102,460	105,296	95,672	83,527	105,062	107,562
Consumption, total . .	71,407	72,971	66,074	57,322	72,611	73,756
By iron furnaces . .	56,701	57,072	50,653	43,098	57,636	59,286

The 1948 level of operation was not maintained in 1949, output for the first ten months totalling 54,292,650 tons, including 51,037,930 tons of by-product coke and 3,254,720 tons of beehive coke—a reduction of 12% in the total from that of the same period of 1948.

Canada.—Coke output advanced from 3,501,130 tons in 1947 to 3,946,101 tons in 1948 and 2,631,282 tons in the first eight months of 1949. Good coking coals are not plentiful in Canada, and some three-quarters of the coke output is made from imported coal, mostly from the United States. The improved domestic supply was reflected in reduced imports and increased exports. Net imports of coke declined from 457,753 tons in 1947 to 394,604 tons in 1948 and 119,440 tons through August 1949. (G. A. Ro.)

Cold, Common.

No fundamental information was added to knowledge of the common cold in 1949, although intensive research was in progress at the National Institute of Health and at the Western Reserve Medical school in the United States and at the National Institute for Medical Research in England. C. H. Andrewes, director of studies at the last named laboratory, restated the problems involved in a series of questions as follows: Is the common cold caused by viruses, by bacteria or neither? Is it an entity or a group of diseases? Can it be "caught" from a patient with a cold, or activated in a person who harbours the causative agent or both? If it can be activated, how? What determines its seasonal incidence and why does resistance to it vary from person to person or in one person at different times? Andrewes succeeded in transmitting colds to volunteers by means of filtered exudates obtained from patients with colds, but was unable to confirm the work of U.S. investigators who reported the cultivation of the filtrable agent artificially. The size of the virus was estimated as between 20 and 50 mμ. None of a large variety of animals could be infected. From his experiments on volunteers Andrewes concluded that colds are probably caused by viruses which constantly pass from one person to another, usually without causing symptoms, or only mild ones. A cold develops only in a person whose resistance is temporarily low. From such a person, virus is disseminated in large amounts, but few persons harbour it long and it probably dies out soon.

Report was made of the beneficial effects of antihistaminic agents on the symptoms of the cold when given early in the course of the disease. It was assumed that the symptoms are caused by an allergic response of the mucous membranes to the protein of the cold virus or to other proteins. There was little doubt of the effectiveness of antihistaminic agents for allergic rhinitis, but their value in preventing or treating the infectious cold was not positively established.

Clifford Kuh and M. F. Collen gave penicillin by mouth regularly to a large number of persons for a year and observed an equal number of untreated ones to see if penicillin had any value in the prevention of respiratory tract infections. Evidence was lacking that penicillin had any effect on the incidence of colds in the treated group.

VOLUNTEERS infected with common cold virus at a U.S. prison hospital. Research was enormously speeded up in 1949 by a chemical test, developed at the National Institute of Health, Bethesda, Md., for rapidly detecting the presence and potency of cold germs in the infecting fluid; new drugs could thus be tested on many more volunteers than was previously possible

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(H. A. RN.)

Colleges and Universities: *see* UNIVERSITIES AND COLLEGES.

Colombia.

A republic situated in northwestern South America adjoining the Isthmus of Panamá. It is the only South American country with both Caribbean and Pacific coast lines. Area: 439,714 sq.mi.; pop. (1948 est.): 10,777,000. Approximately 68% of the population is classified as mixed blood, 20% as white, 7% as Indian and 5% as Negro. Most of the inhabitants live in the highlands and mountain valleys of the interior. The capital is Bogotá (pop. in 1945: 443,520). Other principal cities are Barranquilla (206,630), Bucaramanga (66,220), Cali (135,610), Cartagena (101,520), Cúcuta (72,440); Ibagué (78,970), Manizales (109,820), Medellín (219,-

790), Neiva (38,270), Pasto (60,070), Popayán (34,550), Santa Marta (41,310) and Tunja (25,380). Language: Spanish; religion: predominantly Roman Catholic. President in 1949: Mariano Ospina Pérez.

History.—The political situation in Colombia, acute since the assassination of Liberal leader Jorge Eliécer Gaitán in April 1948, reached a new crisis in 1949 when the Liberals boycotted the presidential election and allowed the Conservative candidate to win virtually unopposed. Meanwhile the gloomy economic condition was brightened materially by the upsurge of coffee prices on the world market.

Frequent armed clashes between Liberal and Conservative partisans throughout the country caused about 40 deaths in the first three months of the year and induced Pres. Ospina Pérez to form a coalition cabinet in May. The Liberal ministers, however, resigned from the cabinet during the same month, charging the administration with restricting their party's activities in the congressional election campaign. The new cabinet, formed May 22 and composed of ten Conservatives and three army officers, decreed the suspension of all political gatherings, demonstrations and radio broadcasts from May 25 until three days after the congressional elections.

In the relatively quiet elections, June 5, the Liberal majority in the chamber of deputies was cut in half. The presidential election, originally scheduled for June 5, 1950, was advanced to Nov. 27, 1949, by a bill sponsored by the Liberals and approved reluctantly by the president in October. The major candidates were the Conservative former foreign minister Laureano Gómez, who returned in June from Spain where he had resided since the April 1948 riots in Bogotá, and the Liberal former minister of interior Darío Echandía.

Political clashes, killing hundreds and causing thousands to flee, continued throughout the country as the presidential election neared. In October the Liberals, accusing the administration party of resorting to violence and impeding the registration of their partisans, withdrew their candidate and prepared to boycott the election. Meanwhile Pres. Ospina Pérez, declaring a nation-wide state of siege, dissolved the Liberal-dominated congress, imposed press and radio censorship, established an evening curfew, banned all public meetings, suspended all state legislature sessions and neutralized the Liberal majority in the supreme court by decreeing a three-fourths majority necessary to nullify presidential edicts. Troops were called out to patrol Bogotá.

Under these conditions the election was held Nov. 27, and the boycott of the Liberals, though not complete, gave the Conservative candidate an adequate majority. No significant violence occurred, although the brother of the Liberal candidate was assassinated two days previously. The Liberals observed election day as one of mourning. President-elect Gómez was scheduled to take office Aug. 7, 1950.

On the economic front Colombia's commercial indebtedness ($23,000,000 for the first three months) was gradually reduced and was completely wiped out by November. A movement in October to devalue the peso by 15 to 20% was abandoned shortly when rising coffee prices promised substantial increases in the country's dollar income. Agricultural and industrial expansion continued throughout the year, financed in part by an Export-Import bank loan of $10,000,000 and a grant of $5,000,000 from the International Bank for Reconstruction and Development. On the darker side, petroleum exploration declined in the face of new nationalization legislation for the industry. Meanwhile the cost of living continued at a high level, the labour-class index rising from 256.3 in March to 304.9 in August (Feb. 1937: 100). In December the government ordered the establishment of a national minimum wage of two pesos a day, effective Jan. 1, 1950.

Education.—In 1945, 12,147 primary schools reported enrolments totalling 788,143 pupils with 23,432 teachers; 1,830 secondary and vocational schools listed 94,669 students and 7,825 teachers (1,421 primary and 606 other schools not reporting). There were six public and two private universities. Approximately 7.4% (14,733,953 pesos) of the 1945 national budget was allocated to public education.

Finance.—The monetary unit is the peso, officially valued at 51.02 cents U.S. on Aug. 19, 1949. The original national budget for 1949 provided for expenditures of 383,476,973 pesos. During the first five months of 1949 the 18,000,000-peso deficit carried over from 1948 was increased by 15,160,000 pesos, and at the end of June a 19,000,000-peso reduction in the current budget was ordered to offset the shortage. The total assets of the Bank of the Republic on Sept. 30 amounted to 660,715,143.78 pesos; major liabilities were 356,425,265.50 pesos in circulating currency and 138,909,557.05 pesos in deposits; the ratio of gold reserves and foreign-exchange holdings to bills in circulation was 39.36%. At the end of 1948 the national debt totalled approximately 530,000,000 pesos, 340,229,745 pesos of which was internal indebtedness.

Trade.—Exports in 1948 were valued at $291,600,000 U.S., including monetary gold and silver ($253,800,000 in 1947), while imports, excluding bullion, totalled $335,000,000 ($345,500,000 in 1947). The United States took 81.1% of the exports and supplied 58.8% of the imports. During the first six months of 1949, exports were up 14.7% and imports were down 7.9%. The chief imports in 1948 were automotive vehicles, raw cotton and textile machinery. The main exports were coffee (5,587,535 bags of 132 lb. each, valued at $225,210,814), bananas (4,416,817 stems, at approx. $5,000,000), petroleum (18,831,621 standard barrels, at $47,875,440), gold, silver and platinum.

Communications.—There were 2,159 mi. of railways in 1945, 9,850 mi. of improved highways, 4,620 mi. of navigable rivers, 72.5 mi. of aerial cables and 41 airports. Registered motor vehicles included 15,306 automobiles, 3,738 buses and 10,062 trucks. In 1948 the nation's registered aeroplanes made 43,130 local flights totalling almost 10,000,000 mi. and carrying more than 500,000 passengers and 170,000,000 lb. of freight.

Agriculture.—The basic industry in Colombia is agriculture, and coffee (normally 6,500,000 bags) is the main commercial crop. Other crops (with 1948 production figures) are sugar (119,638 short tons), corn (699,961 tons), potatoes (535,718 tons), rice (200,575 tons), cotton (6,063 tons), wheat (130,986 tons). Total agricultural production in 1948 amounted to 4,769,652 tons, valued at 1,288,000,000 pesos.

Manufacturing.—The leading manufacturing industries are foodstuff processing, textiles and beverages. In 1945 industrial establishments totalled 7,853, capitalized at 399,940,643 pesos and employing 135,400 persons at pay totalling 641,081,498 pesos.

Mineral Production.—The chief extractive industries (with 1948 production figures) are petroleum (23,850,469 bbl.), gold (335,260 troy oz.), silver (108,716 oz.), platinum (40,047 oz. in 1947), salt (137,073 short tons) and cement (400,960 tons). Gold production was up 13.6% during the first six months of 1949 and during the first eight months petroleum production was up 40.5%.

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Colorado. A Rocky mountain state of the United States, in the west-central part, Colorado has a mean elevation above sea level of 6,800 ft., the highest of any state. Admitted to the union in 1876 as the 38th state, it is known as the "Centennial state." Its area of 104,247 sq.mi. includes 280 sq.mi. of water surface. The U.S. owns 34.5% of the total land area and 59.3% is in private ownership, the remainder belonging to state, county and municipal governments.

Population (1940) 1,123,296; 52.6% urban, 47.4% rural; 93.6% native, 6.4% foreign-born; white 98.5%, Negro 1.1%, other .4%; 102.6 males per 100 females. The 1940 census reported 2,734 Japanese, the largest in number of all races other than white and Negro. On July 1, 1949, the bureau of the census estimated the population at 1,215,000, a gain of 8.2% from 1940. Capital, Denver, pop., 1940 census, 322,412. Other cities (with 1940 populations): Pueblo, 52,162; Colorado Springs, 36,789; Greeley, 15,995.

History.—The Colorado general assembly convened in regular session on Jan. 5, 1949, and adjourned on April 20 after one of the most controversial sessions ever held. Controversy centred mainly over the reorganization of the state highway department and the enactment of a severance tax on oil, both of which the governor requested in his inaugural address and both of which were defeated. Important legislation enacted provided for the creation of a state department of agriculture and the concentration of most agricultural functions in the new department; the ratification of two water compacts with neighbouring states, the Arkansas river and the upper Colorado river compacts; increased benefits under the workmen's and unemployment compensation acts; and the re-enactment of the state income tax at the high rates which had been in force for two years and which would have expired if action had not been taken by the legislature.

The principal constitutional changes made were an amendment providing for the election of a board of education and the appointment by the board of a commissioner of education to replace the superintendent of public instruction.

Democrats occupied all but one of the major state offices during 1949. Governor William Lee Knous began his second term. The other principal officials were: Walter W. Johnson, lieutenant governor; George J. Baker, secretary of state; Myron G. McGinley, state auditor; John W. Metzger, attorney general; Homer F. Bedford, state treasurer; and Mrs. Nettie S. Freed, the only Republican, superintendent of public instruction.

Education.—The total state appropriation for public education in 1948–49 was $8,790,249.88. The average yearly expenditure per pupil in average daily attendance was $47.31; the total average daily attendance was 185,789. The school population, including persons 6 through 21 years of age, increased from 296,939 in 1948 to 305,068 in 1949. A total of 9,548 teachers and administrators were employed.

A program of special services for physically handicapped children in hospitals and at home was maintained by the state.

Social Insurance and Assistance, Public Welfare and Related Programs.—Disbursements from the state public welfare fund in 1948 amounted to $51,116,214.91. Of this amount, $40,297,748.59 was expended for pensions, including burials and the 1948 bonus; $4,360,825.59 for aid to dependent children; $276,512.91 for aid to the blind, for awards, treatment and burials; $3,860,288.52 for general assistance; $365,869.43 for tuberculosis hospitalization; $206,501.26 for child welfare; and $1,748,468.61 for state office administration expenses and allotments to counties for the state's share of salaries and travel. There was a transfer to the general fund of $2,730,550.83. Federal participation during 1948 in old-age pensions, aid to dependent children, aid to the blind, child welfare and administration amounted to $15,822,935.17.

The average monthly number of recipients by program were as follows: for old-age pension, 45,386 received an average of $72.01; 12,577 child recipients of aid to dependent children received an average of $28.96 per child; and 391 aid to the blind cases received an average of $52.08.

Communications.—Total highways (state and federal) in 1949 were 78,789 mi. Improved roads totalled 25,793.2 mi., unimproved roads 52,996.2 mi. Total funds disbursed for highways in 1948 amounted to $23,430,049.07. The total number of registered motor vehicles in 1948 was about 500,000. In 1949 there were 54 bus companies serving the state, and 19 railroads had a total railroad mileage within the state of 4,292.2 mi. There were 6 scheduled air lines serving the state. There were 168 airports and landing fields operating, of which approximately one-third were personal-use ranch type fields.

Telephones in use in Oct. 1949 numbered 392,764. There were 33 standard AM radio stations and 3 FM stations.

Banking and Finance.—As of Dec. 1948 there were 77 national banks and 67 state banks. Deposits in all banks at the close of 1948 were $1,098,866,365. Clearings in Denver (1948) $5,447,361,607.78; in Pueblo, $106,345,322.00; in Colorado Springs, $113,797,254.48.

The cash balance in the treasury on June 30, 1949, was $44,779,693.68. Total revenue in the fiscal year ended June 30, 1949, was $146,017,435.77. All expenditures, including functional services, debt services and transfers amounted to $146,887,988.87. The bonded debt amounted to $470,000, and anticipation warrants $9,015,000; outstanding warrants, cash and general revenue, totalled $4,615,622.44. Investments of $31,014,182.80 plus a cash balance on June 30, 1949, of $44,779,693.68 made a total of $75,793,876.48 in liquid assets.

Agriculture.—Agricultural production remained above the 10-yr. average, although the wheat and potato crops did not attain the record 1948 totals. Production of the leading crops is given in Table I.

Manufacturing.—The department of commerce estimate for the value added by manufacture in Colorado in 1947 was $290,300,000, an increase of 221% over 1939. There were in 1949, 1,603 industries in the state, employing 54,300 persons, with an annual pay roll of $145,000,000. Principal industries were food and kindred products, machinery (except electrical), printing and publishing, petroleum and coal products and stone, clay and glass products. Only 7 plants out of each 100 employed more than 50 persons.

Table I.—*Leading Agricultural Products of Colorado*

Crop	1949 (est.)	1948	Average 1938–47
Corn, bu.	17,160,000	14,304,000	13,902,000
Sorghum for grain, bu.	3,281,000	3,096,000	2,205,000
Wheat, all, bu.	46,297,000	53,525,000	27,703,000
Oats, bu.	7,582,000	6,208,000	5,684,000
Barley, bu.	21,114,000	15,275,000	14,948,000
Sugar beets, tons	1,769,000	1,370,000	1,912,000
Potatoes, bu.	16,750,000	20,670,000	15,506,000
Dry beans, 100-lb. bags	2,336,000	2,333,000	1,873,000
Broomcorn, tons	11,200	9,600	10,910
Hay crops, tons	2,333,000	2,382,000	2,161,000
Apples, bu.	1,606,000	1,395,000	1,524,000
Peaches, bu.	2,109,000	1,922,000	1,868,000
Pears, bu.	198,000	155,000	189,000

Table II.—*Leading Mineral Products of Colorado*

Mineral	Production 1948	Value 1948 (est.)
Molybdenum	...	$10,000,000
Zinc	45,164 tons	12,013,624
Gold	154,802 oz.	5,418,070
Lead	25,143 tons	9,001,194
Silver	3,011,011 oz.	2,725,117
Copper	2,298 tons	997,332

In 1949 the income derived from tourist travel in Colorado was $211,780,000.

Mining Production.—Colorado is a major gold-producing state and in 1946 produced 44% of the world total of vanadium.

Colorado ranks first among the states in the production of molybdenum and vanadium; fourth in lead; sixth in zinc. The total number of persons employed in the state's mineral industries in 1948 was 6,600. The total coal produced was 5,679,876 tons valued at $26,979,411. The number of men employed in the coal mines was 5,680. (P. Ae.)

Columbia, District of: *see* Washington, D.C.

Comets: *see* Astronomy.

Cominform: *see* Communism; Union of Soviet Socialist Republics.

Commerce: *see* Business Review; International Trade.

Commerce, U.S. Department of: *see* Government Departments and Bureaus.

Commission on Organization of the Executive Branch of the Government: *see* Public Utilities; United States.

Commodity Credit Corporation: *see* Agriculture.

Commodity Prices: *see* Business Review; Prices.

Commodity Trading: *see* Agriculture.

Commons, House of: *see* Parliament, Houses of.

Commonwealth Fund, The: *see* Societies and Associations.

Communism.

The history of communism in 1949 was characterized by the growing emphasis on Russia's undisputable precedence in world communism and on Joseph Stalin's "infallibility" in the political, economic, scientific and artistic fields. Generalissimo Stalin's 70th birthday on Dec. 21

POLICE DETAIL outside the federal courthouse in New York city where 11 Communist leaders were being tried in 1949 on charges of conspiracy to overthrow the U.S. government by force. On Oct. 21, 10 of the defendants were sentenced to five-year prison terms each, and the 11th, to a three-year term; all 11 were also fined $10,000 each

"HE'S MAINTAINING RELATIONS WITH THE ENEMY," an Italian view of the conflict between Communism and the Roman Catholic Church, published in *Candido* (Milan) in 1949

was celebrated with unprecedented solemnity throughout the Soviet Union, Communist China and the Russian satellite countries of eastern Europe. On the occasion of this celebration Stalin could look with satisfaction on the immense expansion of his power after World War II. It was true that during 1949 the expansion of communism had been checked in Europe. Not only had there been a re-invigoration of democracy in all non-Russian controlled European lands, but Communist Yugoslavia had successfully challenged the unlimited Russian control over all Communist lands. But this relative setback in Europe had been more than outweighed by the great advance of Communist control in eastern Asia, where Communists occupied almost the whole extent of the Chinese republic and found themselves at the gates of Indo-China and of Burma. Thus communism, at the end of 1949, controlled an area inhabited by about 700,000,000 people and containing, in addition to the resources of the greatly expanded Soviet Union, those of Poland with the former German industrial regions of Silesia, Czechoslovakia, Saxony and Thuringia and Manchuria.

During 1949 Communist policy deepened its antiwestern stand, especially in all fields of culture, science and the arts. The Communist central organ, *Pravda,* carried on Jan. 28 a violent four-column article against six "anti-patriotic" theatre critics which was followed by a similar article in the weekly *Culture and Life* on Jan. 30. "Once and for all," *Pravda* declared, "we must decidedly put an end to the liberal tolerance of all these aesthetic nonentities who lack the healthy feeling of love of country and the people." The year 1949 was largely devoted to a program of doing away with "this aesthetic drivel decisively, once and for ever." Similar constructive energy as to the fight against "decadent bourgeois art" was devoted in the Soviet Union and in its satellites to depict in movies, plays and novels the moral decadence and the economic oppression prevailing in the United States and to denounce the warlike intentions of the U.S. and Britain. Vocal support for the "peace loving" soviet policy against the "war mongering" of the western democracies was organized among non-Russian intellectuals through the various Communist-sponsored "peace" congresses. The most violent attacks, however, were reserved in the domestic field for what was called "homeless cosmopolitanism" and "belittling" of the leadership of Russia in all fields of culture. Russian priority was claimed for many scientific inventions.

This policy within the Soviet Union went hand in hand with an attempt to tighten Communist control over the satellite states. The main instrument of this policy was the Communist Information bureau, or the Cominform. In June 1948 the Cominform had begun its attack on the Yugoslav Communist government. In Nov. 1949 the Cominform met in Hungary and adopted a number of resolutions directed against "Anglo-American Imperialism," the "enslaving Marshall Plan," the "reactionary trade union leaders, the accomplices of the war-mongers, who conceal their betrayal in pseudo-Socialist cosmopolitan phraseology," and the "traitorous Tito-Rankovich clique," the Yugoslav Communist government which was accused of conducting a provocative campaign against the U.S.S.R., "using the foulest provocations, borrowed from the arsenal of Hitler." There could be no doubt that the long and successful resistance of Marshal Tito and his fully Communist government to the "cold war" waged against them by the Soviet Union and the Cominform did much to weaken the influence of Moscow among Communists and fellow travellers.

The actions of the Cominform and the unquestioning loyalty which Moscow demanded from Communists everywhere made it clear that the Communist International, though officially disbanded in 1943, was stronger than ever. In that sense Georgi Dimitrov, the Bulgarian Communist leader, wrote on Dec. 18, 1948: "It should not be forgotten that—in spite of the fact that the Communist International does not exist—all Communist parties in the world form one single Communist front, under the direction of the most powerful and most experienced Communist party, the party of Lenin and Stalin; that all Communist parties have one common scientific theory as a guide to their actions—Marxist-Leninism; and that all Communist parties have one leader and teacher, recognized by all—Comrade Stalin." In that connection the leaders of the French and Italian Communist parties, Maurice Thorez and Palmiro Togliatti, declared that in case of a war with the Soviet Union the workers of France and Italy would show the same attitude toward the soviet army as did the people of Poland, Rumania and Yugoslavia. The Communist party in the U.S. backed this declaration of loyalty to the Soviet Union on the part of the European Communist leaders.

The Moscow leadership took strong measures in all European satellite countries to assure an unswerving loyalty to its commands on the part of the local Communists. Purges were conducted in all the Communist parties, and even some of the most prominent Communist leaders became their victims. Among them were Laszlo Rajk in Hungary, Traicho Kostov in Bulgaria, and Koçi Xoxe in Albania who were executed while the Greek Communist leader, Gen. Markos Vafiades, and the Polish Communist, Wladyslaw Gomulka, were disgraced, and the Russian marshal, Konstantin Rokossovsky, was put in charge of the Polish army. No such measures were necessary in China, where the Communist party, under the leadership of Mao Tse-tung, followed faithfully the Moscow line and repeated wholeheartedly the sharp Communist attacks against the United States and the democratic countries. The establishment of the Communist People's Republic of China on Oct. 1 was hailed by the soviet historian, Eugene Tarle, in *Izvestia* as one of the two "stupendous events" of the year, the other being the end of the U.S. monopoly of atomic bombs.

The Communist victories in Asia had no counterpart in Europe. There, even in countries bordering on the Soviet Union or partly under soviet influence, such as Norway, Finland and Austria, communism was fast losing whatever hold it had on the working masses. The Communist-led strikes in Finland, which started in August, ended within four weeks with a complete victory of the anti-Communist government; in the elections to the Norwegian parliament no Communist candidate was elected; and as a result of elections in Austria, the representation of the Communists in the chambers of labour fell from 135 to 54. At its September meeting the British Trades Union congress endorsed by 6,746,000 to 760,000 votes the campaign of its general council against Communist interference in the affairs of its affiliated trade unions. Similarly the Communists ost much of the influence which they had gained in the last 20 years in the U.S. labour movement. The Congress of Industrial Organizations (C.I.O.) withdrew from the Communist-conrolled World Federation of Trade Unions and was responsible, ogether with the American Federation of Labor, for the creation of an anti-Communist International Confederation of Free Trade Unions. The C.I.O. convention in Cleveland, O., at the beginning of November expelled two affiliates, the United Elecrical, Radio and Machine Workers of America and the United Farm Equipment and Metal Workers of America, accusing them of being creatures of the Communist party, masquerading as rade unions. Similarly Britain's largest trade union, the Transport and General Workers' union, voted to bar Communists and members of the British Fascist union from holding office in he union.

The 12 top leaders of the Communist party of the United States who were indicted by a special federal grand jury on July 20, 1948, were tried (with the exception of William Z. Foster who was ill) before Federal Judge Harold R. Medina rom Jan. 17 to Oct. 14, 1949, when they were found guilty by he jury of secretly teaching and advocating, on secret orders rom Moscow, the overthrow of the U.S. government and the destruction of American democracy by violent means. Ten of hese were sentenced to five years' and one to three years' imprisonment and all were fined $10,000 each, but the verdict was appealed. The small vote which the American Labor party cast at the mayoralty elections in New York city in Nov. 1949, the dissolution of the American Youth for Democracy, a Communist-front organization on college campuses, and the decline of the influence of the American Slav congress, a Communist-front organization among the U.S. citizens of Slav descent, all pointed in the same direction. A similar weakening of Communist influence, especially in the labour movements, became visible in Canada, Australia and New Zealand. (*See* also CHINA; DEMOCRACY; EDUCATION; LAW; SOCIALISM.)

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Community Chest.

The community chest is the name given to a local federation made up of ealth, welfare and recreation agencies supported by voluntary contributions. Its purpose is to raise annually, by a single, united campaign, funds for the support of its member agencies, nd through community welfare councils financed by chest unds, to promote joint planning for health and welfare in the ommunity.

Community Chests and Councils of America, Inc., is the naional association of local community chests and welfare counils, and was organized in Feb. 1918.

Of the 1,679 community chests and welfare councils in operaion in Sept. 1949 (1,270 chests and 409 councils) 1,207 chests nd 382 councils were in the continental U.S.; 5 chests and 4 ouncils in Hawaii; 50 chests and 22 councils in Canada; 2 hests in South Africa; 1 chest in the Virgin Islands; 1 chest n Puerto Rico; 1 council in the British West Indies; 2 chests n Japan; 1 chest in the Philippines and 1 chest in Alaska. Almost every city in the U.S. (except New York city, which as a limited joint-financing organization and a welfare council) n 1949 had a community chest or similar plan of federated nancing for its voluntary social services. In 1,152 cities in 948, more than 18,000,000 contributions totalling $188,061,328 were given to community chests to be used during 1949 for voluntary health and welfare services in their communities. In 1949 the United Service organizations (U.S.O.) also got its major support through inclusion in chest campaigns throughout the country.

National promotion of chest campaigns is carried on under the name "The Community Chests of America" using the national symbol of the Red Feather.

Officers of C.C.C., Inc., for 1949 were: honorary president, Gerard Swope, New York city; president, Edward L. Ryerson, Chicago, Ill.; treasurer, Milton H. Glover, Hartford, Conn.; secretary, Mrs. Oswald B. Lord, New York city. Ralph H. Blanchard was executive director.

The address of the association was 155 E. 44th St., New York 17, N.Y. (B. A.)

Community Trusts.

Assets of $91,401,968 were reported as constituting community trusts and foundations in the United States, Canada and Hawaii on Jan. 1, 1949. During 1948 these composite foundations appropriated $3,361,521 for charitable projects and received new resources totalling approximately $3,200,000.

The largest of these foundations was the New York Community trust, whose 100 funds were valued at $18,201,629. The Chicago Community trust held $13,308,000; the Cleveland foundation, $11,094,406; the Permanent Charity fund, Boston, $8,563,382; and the California Community foundation, $7,312,002.

Of the disbursements made in 1948, the New York Community trust paid out $649,910; Kalamazoo, $558,371; Chicago, $420,716; Cleveland, $417,068; and Boston, $353,551.

Funds newly received during 1948 included $770,261 accruing to the New York Community trust; $475,000 to the Minneapolis foundation; and $362,147 to the California Community foundation. The San Francisco foundation became operative in the year and the Lake County foundation, Painesville, O., made its initial distribution of funds.

Of 64 community trusts surveyed in 1949, 57 were administering principal resources and 46 were making current distributions out of 755 funds on hand. Cumulative disbursements of community foundations since 1927 amounted to $32,595,352.

A community trust consists ordinarily of a series of trust funds of varied sizes and for diverse charitable uses. Fiscal management of the administered amounts is usually entrusted to trustee banks selected by the contributors of the funds. Appropriations are made under the authority and supervision of a central distributing committee, which undertakes to give expression to the specific desires of a founder but which is likewise empowered by him to take appropriate remedial action if originally expressed preferences subsequently become impossible or impractical of execution. (R. Hs.)

Compound E: *see* ARTHRITIS; CHEMISTRY; CHEMOTHERAPY; CHEMURGY; ENDOCRINOLOGY; HEART AND HEART DISEASES; MEDICINE; NERVOUS SYSTEM.

Confectionery: *see* CANDY.

Congo, Belgian: *see* BELGIAN COLONIAL EMPIRE.

Congregational Christian Churches.

The Congregational Christian Churches of the United States, established at Plymouth, Mass., in 1620, had 5,715 churches in 1949. The denomination reported 1,184,661 members for the year, 534,118 church school members and 5,839 pastors. The total benevolence giving was $5,596,949 and for home expenses $27,477,429. The average salary for pastors was $2,813. The value of church property was $241,351,575.

During 1949 the American Congregational Churches entertained the International Congregational council for its world convention at Wellesley college, Wellesley, Mass., June 17 to 24, when 600 delegates from 21 countries met to consider world conditions and the church's responsibility for bettering the ills of mankind. A world program was adopted for bringing the churches of the world closer together for strengthening church ties, for undergirding moral and religious teachings and for assistance to the world's needy.

The Congregational Christian Churches were planning a merger with the Evangelical and Reformed Church to be consummated at Cleveland, O., in June 1950. This merger would unite two church bodies, one of English ancestry, the other with German and Swiss background. The name of the new united church would be the United Church of Christ. Headquarters would be maintained in New York, Chicago, Philadelphia and St. Louis. (*See* also CHRISTIAN UNITY.)

The merger would involve uniting the educational, missionary and publishing agencies of the two church bodies. (*See* also CHURCH MEMBERSHIP.)

Congress, United States. The 81st U.S. congress convened for its second session on Jan. 3, 1950. It comprised the following members (as of Jan. 3, 1950):

United States Senate

Presiding Officer: Alben W. Barkley of Kentucky
Majority Leader: Scott W. Lucas of Illinois
Minority Leader: Kenneth S. Wherry of Nebraska
Democrats: 54; Republicans: 42.

State	Name	Party	Term Expires	Residence
Ala.	Hill, Lister	Dem.	1951	Montgomery
	Sparkman, John	Dem.	1955	Huntsville
Ariz.	McFarland, Ernest W.	Dem.	1953	Florence
	Hayden, Carl	Dem.	1951	Phoenix
Ark.	Fulbright, J. W.	Dem.	1951	Fayetteville
	McClellan, John L.	Dem.	1955	Camden
Calif.	Knowland, William F.	Rep.	1953	Oakland
	Downey, Sheridan	Dem.	1951	Laguna Beach
Colo.	Johnson, Edwin C.	Dem.	1955	Denver
	Millikin, Eugene D.	Rep.	1951	Denver
Conn.	McMahon, Brien	Dem.	1951	Norwalk
	Benton, William[1]	Dem.	1953	Southport
Del.	Frear, J. Allen, Jr.	Dem.	1955	Dover
	Williams, John J.	Rep.	1953	Millsboro
Fla.	Pepper, Claude	Dem.	1951	Tallahassee
	Holland, Spessard L.	Dem.	1953	Bartow
Ga.	George, Walter F.	Dem.	1951	Vienna
	Russell, Richard B.	Dem.	1955	Winder
Ida.	Taylor, Glen H.	Dem.	1951	Pocatello
	Dworshak, Henry C.[2]	Rep.	1955	Burley
Ill.	Douglas, Paul H.	Dem.	1955	Chicago
	Lucas, Scott W.	Dem.	1951	Havana
Ind.	Capehart, Homer E.	Rep.	1951	Washington
	Jenner, William E.	Rep.	1953	Bedford
Iowa	Gillette, Guy M.	Dem.	1955	Cherokee
	Hickenlooper, Bourke B.	Rep.	1951	Cedar Rapids
Kan.	Schoeppel, Andrew F.	Rep.	1955	Wichita
	Darby, Harry[3]	Rep.	1951	Kansas City
Ky.	Withers, Garrett L.[4]	Dem.	1951	Dixon
	Chapman, Virgil	Dem.	1955	Paris
La.	Long, Russell B.	Dem.	1951	Baton Rouge
	Ellender, Allen J.	Dem.	1955	Houma
Me.	Brewster, Owen	Rep.	1953	Dexter
	Smith, Margaret Chase	Rep.	1955	Skowhegan
Md.	Tydings, Millard E.	Dem.	1951	Havre de Grace
	O'Conor, Herbert R.	Dem.	1953	Annapolis
Mass.	Saltonstall, Leverett	Rep.	1955	Boston
	Lodge, Henry Cabot, Jr.	Rep.	1953	Beverly
Mich.	Vandenberg, Arthur H.	Rep.	1953	Grand Rapids
	Ferguson, Homer	Rep.	1955	Detroit
Minn.	Humphrey, Hubert H.	Dem.	1955	Minneapolis
	Thye, Edward J.	Rep.	1953	Northfield
Miss.	Eastland, James O.	Dem.	1955	Ruleville
	Stennis, John C.	Dem.	1953	De Kalb
Mo.	Donnell, Forrest C.	Rep.	1951	Webster Groves
	Kem, James P.	Rep.	1953	Kansas City
Mont.	Murray, James E.	Dem.	1955	Butte
	Ecton, Zales N.	Rep.	1953	Manhattan
Neb.	Wherry, Kenneth S.	Rep.	1955	Pawnee City
	Butler, Hugh	Rep.	1953	Omaha
Nev.	McCarran, Patrick	Dem.	1951	Reno
	Malone, George W.	Rep.	1953	Reno
N.H.	Tobey, Charles W.	Rep.	1951	Temple
	Bridges, Styles	Rep.	1955	Concord
N.J.	Hendrickson, Robert C.	Rep.	1955	Woodbury
	Smith, H. Alexander	Rep.	1953	Princeton
N.M.	Anderson, Clinton P.	Dem.	1955	Albuquerque
	Chavez, Dennis	Dem.	1953	Albuquerque
N.Y.	Lehman, Herbert H.[5]	Dem.	1951	New York city
	Ives, Irving M.	Rep.	1953	Norwich
N.C.	Graham, Frank P.[6]	Dem.	1955	Chapel Hill
	Hoey, Clyde R.	Dem.	1951	Shelby
N.D.	Langer, William	Rep.	1953	Bismarck
	Young, Milton R.	Rep.	1951	Berlin
Ohio	Taft, Robert A.	Rep.	1951	Cincinnati
	Bricker, John W.	Rep.	1953	Columbus
Okla.	Thomas, Elmer	Dem.	1951	Medicine Park
	Kerr, Robert S.	Dem.	1955	Oklahoma City
Ore.	Cordon, Guy	Rep.	1955	Roseburg
	Morse, Wayne	Rep.	1951	Eugene
Pa.	Myers, Francis J.	Dem.	1951	Philadelphia
	Martin, Edward	Rep.	1953	Washington
R.I.	Green, Theodore Francis	Dem.	1955	Providence
	Leahy, Edward L.[7]	Dem.	1953	Bristol
S.C.	Johnston, Olin D.	Dem.	1951	Spartanburg
	Maybank, Burnet R.	Dem.	1955	Charleston
S.D.	Mundt, Karl E.	Rep.	1955	Madison
	Gurney, Chan	Rep.	1951	Yankton
Tenn.	McKellar, Kenneth	Dem.	1953	Memphis
	Kefauver, Estes	Dem.	1955	Chattanooga
Tex.	Johnson, Lyndon B.	Dem.	1955	Johnson City
	Connally, Tom	Dem.	1953	Marlin
Utah	Thomas, Elbert D.	Dem.	1951	Salt Lake City
	Watkins, Arthur V.	Rep.	1953	Orem
Vt.	Aiken, George D.	Rep.	1951	Putney
	Flanders, Ralph E.	Rep.	1953	Springfield
Va.	Byrd, Harry F.	Dem.	1953	Berryville
	Robertson, A. Willis	Dem.	1955	Lexington
Wash.	Magnuson, Warren G.	Dem.	1951	Port Blakely
	Cain, Harry P.	Rep.	1953	Tacoma
W.Va.	Neely, Matthew M.	Dem.	1955	Fairmont
	Kilgore, Harley M.	Dem.	1953	Beckley
Wis.	Wiley, Alexander	Rep.	1951	Chippewa Falls
	McCarthy, Joseph R.	Rep.	1953	Appleton
Wyo.	O'Mahoney, Joseph C.	Dem.	1953	Cheyenne
	Hunt, Lester C.	Dem.	1955	Cheyenne

[1] Appointed by the governor to fill the vacancy caused by the resignation of Raymon E. Baldwin, Dec. 17, 1949.

[2] Appointed by the governor to fill the vacancy caused by the death of Bert H. Miller Oct. 8, 1949.

[3] Appointed by the governor to fill the vacancy caused by the death of Clyde M. Reed Nov. 8, 1949.

[4] Appointed by the governor to fill the vacancy caused by the resignation of Alben W Barkley, Jan. 19, 1949.

[5] Elected Nov. 8, 1949, to succeed John F. Dulles, who was appointed by the governor t fill the vacancy caused by the resignation of Robert F. Wagner, June 28, 1949.

[6] Appointed by the governor to fill the vacancy caused by the death of J. Melvill Broughton, Mar. 6, 1949.

[7] Appointed by the governor to fill the vacancy caused by the resignation of J. Howar McGrath, Aug. 23, 1949.

United States House of Representatives (*served in 80t congress)

Speaker: Sam Rayburn of Texas
Majority Leader: John W. McCormack of Massachusetts
Minority Leader: Joseph W. Martin, Jr., of Massachusetts
Democrats: 261; Republicans: 169; American Labor: 1; Democratic-Liberal: 1; Vacancies: 3.

State	Dist.	Name	Party	Residence
Ala.	1	*Boykin, Frank W.	Dem.	Mobile
	2	*Grant, George M.	Dem.	Troy
	3	*Andrews, George W.	Dem.	Union Springs
	4	*Hobbs, Sam	Dem.	Selma
	5	*Rains, Albert	Dem.	Gadsden
	6	DeGraffenried, Edward	Dem.	Tuscaloosa
	7	Elliott, Carl	Dem.	Jasper
	8	*Jones, Robert E., Jr.	Dem.	Scottsboro
	9	*Battle, Laurie C.	Dem.	Birmingham
Ariz.	1	*Murdock, John R.	Dem.	Tempe
	2	Patten, Harold A.	Dem.	Tucson
Ark.	1	*Gathings, E. C.	Dem.	West Memphis
	2	*Mills, Wilbur D.	Dem.	Kensett
	3	*Trimble, James W.	Dem.	Berryville
	4	Tackett, Boyd	Dem.	Nashville
	5	*Hays, Brooks	Dem.	Little Rock
	6	*Norrell, W. F.	Dem.	Monticello
	7	*Harris, Oren	Dem.	El Dorado

State	Dist.	Name	Party	Residence
Calif.	1	Scudder, Hubert B.	Rep.	Sebastopol
	2	*Engle, Clair	Dem.	Red Bluff
	3	*Johnson, Leroy	Rep.	Stockton
	4	*Havenner, Franck R.	Dem.	San Francisco
	5	Shelley, John F.[1]	Dem.	San Francisco
	6	*Miller, George P.	Dem.	Alameda
	7	*Allen, John J., Jr.	Rep.	Oakland
	8	*Anderson, Jack Z.	Rep.	San Juan Bautista
	9	White, Cecil F.	Dem.	Fresno
	10	Werdel, Thomas H.	Rep.	Bakersfield
	11	*Bramblett, Ernest K.	Rep.	Pacific Grove
	12	*Nixon, Richard M.	Rep.	Whittier
	13	*Poulson, Norris	Rep.	Los Angeles
	14	*Douglas, Helen Gahagan	Dem.	Los Angeles
	15	*McDonough, Gordon L.	Rep.	Los Angeles
	16	*Jackson, Donald L.	Rep.	Santa Monica
	17	*King, Cecil R.	Dem.	Los Angeles
	18	Doyle, Clyde	Dem.	Long Beach
	19	*Holifield, Chet	Dem.	Montebello
	20	*Hinshaw, Carl	Rep.	Pasadena
	21	*Sheppard, Harry R.	Dem.	Yucaipa
	22	*Phillips, John	Rep.	Banning
	23	McKinnon, Clinton D.	Dem.	San Diego
Colo.	1	*Carroll, John A.	Dem.	Denver
	2	*Hill, William S.	Rep.	Fort Collins
	3	Marsalis, John H.	Dem.	Pueblo
	4	Aspinall, Wayne N.	Dem.	Palisade
Conn.	1	Ribicoff, Abraham A.	Dem.	Hartford
	2	Woodhouse, Chase Going	Dem.	Baltic (R.F.D.)
	3	McGuire, John A.	Dem.	Wallingford
	4	*Lodge, John Davis	Rep.	Westport
	5	*Patterson, James T.	Rep.	Naugatuck
		*Sadlak, Antoni N.	Rep.	Rockville
Del.		*Boggs, J. Caleb	Rep.	Wilmington
Fla.	1	*Peterson, J. Hardin	Dem.	Lakeland
	2	Bennett, Charles E.	Dem.	Jacksonville
	3	*Sikes, Robert L. F.	Dem.	Crestview
	4	*Smathers, George A.	Dem.	Miami
	5	Herlong, A. S., Jr.	Dem.	Leesburg
	6	*Rogers, Dwight L.	Dem.	Fort Lauderdale
Ga.	1	*Preston, Prince H., Jr.	Dem.	Statesboro
	2	*Cox, E. E.	Dem.	Camilla
	3	*Pace, Stephen	Dem.	Americus
	4	*Camp, A. Sidney	Dem.	Newnan
	5	*Davis, James C.	Dem.	Decatur
	6	*Vinson, Carl	Dem.	Milledgeville
	7	*Lanham, Henderson	Dem.	Rome
	8	*Wheeler, W. M. (Don)	Dem.	Alma
	9	*Wood, John S.	Dem.	Canton
	10	*Brown, Paul	Dem.	Elberton
Ida.	1	White, Compton I.	Dem.	Clark Fork
	2	*Sanborn, John	Rep.	Hagerman
Ill.	1	*Dawson, William L.	Dem.	Chicago
	2	O'Hara, Barratt	Dem.	Chicago
	3	Linehan, Neil J.	Dem.	Chicago
	4	Buckley, James V.	Dem.	Lansing
	5	Vacancy[2]		
	6	*O'Brien, Thomas J.	Dem.	Chicago
	7	*Sabath, Adolph J.	Dem.	Chicago
	8	*Gordon, Thomas S.	Dem.	Chicago
	9	Yates, Sidney R.	Dem.	Chicago
	10	Hoffman, Richard W.	Rep.	Berwyn
	11	Chesney, Chester A.	Dem.	Chicago
	12	Jonas, Edgar A.	Rep.	Chicago
	13	*Church, Ralph E.	Rep.	Evanston
	14	*Reed, Chauncey W.	Rep.	West Chicago
	15	*Mason, Noah M.	Rep.	Oglesby
	16	*Allen, Leo E.	Rep.	Galena
	17	*Arends, Leslie C.	Rep.	Melvin
	18	Velde, Harold H.	Rep.	Pekin
	19	*Chiperfield, Robert B.	Rep.	Canton
	20	*Simpson, Sid	Rep.	Carrollton
	21	Mack, Peter F., Jr.	Dem.	Carlinville
	22	*McMillen, Rolla C.	Rep.	Decatur
	23	*Jenison, Edward H.	Rep.	Paris
	24	*Vursell, Charles W.	Rep.	Salem
	25	*Price, Melvin	Dem.	East St. Louis
	26	*Bishop, C. W.	Rep.	Carterville
Ind.	1	*Madden, Ray J.	Dem.	Gary
	2	*Halleck, Charles A.	Rep.	Rensselaer
	3	Crook, Thurman C.	Dem.	South Bend
	4	Kruse, Edward H., Jr.	Dem.	Fort Wayne
	5	Walsh, John R.	Dem.	Anderson
	6	Harden, Cecil M.	Rep.	Covington
	7	Noland, James E.	Dem.	Bloomington
	8	Denton, Winfield K.	Dem.	Evansville
	9	*Wilson, Earl	Rep.	Bedford
	10	*Harvey, Ralph	Rep.	New Castle
	11	Jacobs, Andrew	Dem.	Indianapolis

State	Dist.	Name	Party	Residence
Iowa	1	*Martin, Thomas E.	Rep.	Iowa City
	2	*Talle, Henry O.	Rep.	Decorah
	3	Gross, H. R.	Rep.	Waterloo
	4	*LeCompte, Karl M.	Rep.	Corydon
Iowa	5	*Cunningham, Paul	Rep.	Des Moines
	6	*Dolliver, James I.	Rep.	Fort Dodge
	7	*Jensen, Ben F.	Rep.	Exira
	8	*Hoeven, Charles B.	Rep.	Alton
Kan.	1	*Cole, Albert M.	Rep.	Holton
	2	*Scrivner, Errett P.	Rep.	Kansas City
	3	*Meyer, Herbert A.	Rep.	Independence
	4	*Rees, Edward H.	Rep.	Emporia
	5	*Hope, Clifford R.	Rep.	Garden City
	6	*Smith, Wint	Rep.	Mankato
Ky.	1	*Gregory, Noble J.	Dem.	Mayfield
	2	*Whitaker, John A.	Dem.	Russellville
	3	*Morton, Thruston Ballard	Rep.	Glenview
	4	*Chelf, Frank L.	Dem.	Lebanon
	5	*Spence, Brent	Dem.	Fort Thomas
	6	Underwood, Thomas R.	Dem.	Lexington
	7	Perkins, Carl D.	Dem.	Hindman
	8	*Bates, Joe B.	Dem.	Greenup
	9	Golden, James S.	Rep.	Pineville
La.	1	*Hébert, F. Edward	Dem.	New Orleans
	2	*Boggs, Hale	Dem.	New Orleans
	3	Willis, Edwin E.	Dem.	St. Martinsville
	4	*Brooks, Overton	Dem.	Shreveport
	5	*Passman, Otto E.	Dem.	Monroe
	6	*Morrison, James H.	Dem.	Hammond
	7	*Larcade, Henry D., Jr.	Dem.	Opelousas
	8	*Allen, A. Leonard	Dem.	Winnfield
Me.	1	*Hale, Robert	Rep.	Portland
	2	Nelson, Charles P.	Rep.	Augusta
	3	*Fellows, Frank	Rep.	Bangor
Md.	1	*Miller, Edward T.	Rep.	Easton
	2	Bolton, William P.	Dem.	Towson
	3	*Garmatz, Edward A.	Dem.	Baltimore
	4	*Fallon, George H.	Dem.	Baltimore
	5	*Sasscer, Lansdale G.	Dem.	Upper Marlboro
	6	*Beall, J. Glenn	Rep.	Frostburg
Mass.	1	*Heselton, John W.	Rep.	Deerfield
	2	Furcolo, Foster	Dem.	Longmeadow
	3	*Philbin, Philip J.	Dem.	Clinton
	4	*Donohue, Harold D.	Dem.	Worcester
	5	*Rogers, Edith Nourse	Rep.	Lowell
	6	Vacancy[3]		
	7	*Lane, Thomas J.	Dem.	Lawrence
	8	*Goodwin, Angier L.	Rep.	Melrose
	9	*Nicholson, Donald W.	Rep.	Wareham
	10	*Herter, Christian A.	Rep.	Boston
	11	*Kennedy, John F.	Dem.	Boston
	12	*McCormack, John W.	Dem.	Dorchester
	13	*Wigglesworth, Richard B.	Rep.	Milton
	14	*Martin, Joseph W., Jr.	Rep.	North Attleboro
Mich.	1	*Sadowski, George G.	Dem.	Detroit
	2	*Michener, Earl C.	Rep.	Adrian
	3	*Shafer, Paul W.	Rep.	Battle Creek
	4	*Hoffman, Clare E.	Rep.	Allegan
	5	Ford, Gerald R., Jr.	Rep.	East Grand Rapids
	6	*Blackney, William W.	Rep.	Flint
	7	*Wolcott, Jesse P.	Rep.	Port Huron
	8	*Crawford, Fred L.	Rep.	Saginaw
	9	*Engel, Albert J.	Rep.	Muskegon
	10	*Woodruff, Roy O.	Rep.	Bay City
	11	*Potter, Charles E.	Rep.	Cheboygan
	12	*Bennett, John B.	Rep.	Ontonagon
	13	O'Brien, George D.	Dem.	Detroit
	14	Rabaut, Louis C.	Dem.	Grosse Pointe Park
	15	*Dingell, John D.	Dem.	Detroit
	16	*Lesinski, John	Dem.	Dearborn
	17	*Dondero, George A.	Rep.	Royal Oak
Minn.	1	*Andresen, August H.	Rep.	Red Wing
	2	*O'Hara, Joseph P.	Rep.	Glencoe
	3	Weir, Roy W.	Dem.	Minneapolis
	4	McCarthy, Eugene J.	Dem.	St. Paul
	5	*Judd, Walter H.	Rep.	Minneapolis
	6	Marshall, Fred	Dem.	Grove City (R.F.D.)
	7	*Andersen, H. Carl	Rep.	Tyler
	8	*Blatnik, John A.	Dem.	Chisholm
	9	*Hagen, Harold C.	Rep.	Crookston
Miss.	1	*Rankin, John E.	Dem.	Tupelo
	2	*Whitten, Jamie L.	Dem.	Charleston
	3	*Whittington, William M.	Dem.	Greenwood
	4	*Abernethy, Thomas G.	Dem.	Okolona
	5	*Winstead, Arthur	Dem.	Philadelphia
	6	*Colmer, William M.	Dem.	Pascagoula
	7	*Williams, John Bell	Dem.	Raymond
Mo.	1	Magee, Clare	Dem.	Unionville
	2	Moulder, Morgan M.	Dem.	Camdenton

State	Dist.	Name	Party	Residence
Mo.	3	Welch, Phil J.	Dem.	St. Joseph
	4	Irving, Leonard	Dem.	Independence
	5	Bolling, Richard	Dem.	Kansas City
	6	Christopher, George H.	Dem.	Amoret
	7	*Short, Dewey	Rep.	Galena
	8	Carnahan, A. S. J.	Dem.	Ellsinore
	9	*Cannon, Clarence	Dem.	Elsberry
	10	*Jones, Paul C.	Dem.	Kennett
	11	Sullivan, John B.	Dem.	St. Louis
	12	Karst, Raymond W.	Dem.	St. Louis
	13	*Karsten, Frank M.	Dem.	St. Louis
Mont.	1	*Mansfield, Mike	Dem.	Missoula
	2	*D'Ewart, Wesley A.	Rep.	Wilsall
Neb.	1	*Curtis, Carl T.	Rep.	Minden
	2	O'Sullivan, Eugene D.	Dem.	Omaha
	3	*Stefan, Karl	Rep.	Norfolk
	4	*Miller, A. L.	Rep.	Kimball
Nev.		Baring, Walter S.	Dem.	Reno
N.H.	1	*Merrow, Chester E.	Rep.	Center Ossipee
	2	*Cotton, Norris	Rep.	Lebanon
N.J.	1	*Wolverton, Charles A.	Rep.	Merchantville
	2	*Hand, T. Millet	Rep.	Cape May City
	3	*Auchincloss, James C.	Rep.	Rumson
	4	Howell, Charles R.	Dem.	Pennington
	5	*Eaton, Charles A.	Rep.	Watchung
	6	*Case, Clifford P.	Rep.	Rahway
	7	Vacancy[4]		
	8	*Canfield, Gordon	Rep.	Paterson
	9	*Towe, Harry L.	Rep.	Rutherford
	10	Rodino, Peter W., Jr.	Dem.	Newark
	11	Addonizio, Hugh J.	Dem.	Newark
	12	*Kean, Robert W.	Rep.	Livingston
	13	*Norton, Mary T.	Dem.	Jersey City
	14	*Hart, Edward J.	Dem.	Jersey City
N.M.		*Fernandez, Antonio M.	Dem.	Santa Fe
		Miles, John E.	Dem.	Santa Fe
N.Y.	1	*Macy, W. Kingsland	Rep.	Islip
	2	*Hall, Leonard W.	Rep.	Oyster Bay
	3	*Latham, Henry J.	Rep.	Queens Village
	4	Clemente, L. Gary	Dem.	Ozone Park
	5	Quinn, T. Vincent	Dem.	Jackson Heights
	6	Delaney, James J.	Dem.	Long Island City
	7	Heller, Louis B.[5]	Dem.	Brooklyn
	8	*Pfeifer, Joseph L.	Dem.	Brooklyn
	9	*Keogh, Eugene J.	Dem.	Brooklyn
	10	Kelly, Edna F.[6]	Dem.	Brooklyn
	11	*Heffernan, James J.	Dem.	Brooklyn
	12	*Rooney, John J.	Dem.	Brooklyn
	13	*O'Toole, Donald L.	Dem.	Brooklyn
	14	*Multer, Abraham J.	Dem.	Brooklyn
	15	*Celler, Emanuel	Dem.	Brooklyn
	16	Murphy, James J.	Dem.	Staten Island
	17	*Coudert, Frederic R., Jr.	Rep.	New York city
	18	*Marcantonio, Vito	Am. Labor	New York city
	19	*Klein, Arthur G.	Dem.	New York city
	20	Roosevelt, Franklin D., Jr.[7]	Dem.-Lib.	New York city
	21	*Javits, Jacob K.	Rep.	New York city
	22	*Powell, Adam C., Jr.	Dem.	New York city
	23	*Lynch, Walter A.	Dem.	New York city
	24	Dollinger, Isidore	Dem.	New York city
	25	*Buckley, Charles A.	Dem.	New York city
	26	McGrath, Christopher C.	Dem.	New York city
	27	*Gwinn, Ralph W.	Rep.	Bronxville
	28	*Gamble, Ralph A.	Rep.	Larchmont
	29	*St. George, Katharine	Rep.	Tuxedo Park
	30	*LeFevre, Jay	Rep.	New Paltz
	31	*Kearney, Bernard W.	Rep.	Gloversville
	32	*Byrne, William T.	Dem.	Loudonville
	33	*Taylor, Dean P.	Rep.	Troy
	34	*Kilburn, Clarence E.	Rep.	Malone
	35	Davies, John C.	Dem.	Utica
	36	*Riehlman, R. Walter	Rep.	Tully
	37	*Hall, Edwin Arthur	Rep.	Binghamton
	38	*Taber, John	Rep.	Auburn
	39	*Cole, W. Sterling	Rep.	Bath
	40	*Keating, Kenneth B.	Rep.	Rochester
	41	*Wadsworth, James W.	Rep.	Geneseo
	42	Pfeiffer, William L.	Rep.	Kenmore
	43	Tauriello, Anthony F.	Dem.	Buffalo
	44	Gorski, Chester C.	Dem.	Buffalo
	45	*Reed, Daniel A.	Rep.	Dunkirk
N.C.	1	*Bonner, Herbert C.	Dem.	Washington
	2	*Kerr, John H.	Dem.	Warrenton
	3	*Barden, Graham A.	Dem.	New Bern
	4	*Cooley, Harold D.	Dem.	Nashville
	5	Chatham, Thurmond	Dem.	Winston-Salem
	6	*Durham, Carl T.	Dem.	Chapel Hill
N.C.	7	Carlyle, F. Ertel	Dem.	Lumberton
	8	*Deane, Charles B.	Dem.	Rockingham
	9	*Doughton, Robert L.	Dem.	Laurel Springs
	10	*Jones, Hamilton C.	Dem.	Charlotte
	11	*Bulwinkle, Alfred L.	Dem.	Gastonia
	12	*Redden, Monroe M.	Dem.	Hendersonville
N.D.		*Lemke, William	Rep.	Fargo
		Burdick, Usher L.	Rep.	Williston
Ohio	1	*Elston, Charles H.	Rep.	Cincinnati
	2	Wagner, Earl T.	Dem.	Cincinnati
	3	Breen, Edward	Dem.	Dayton
	4	*McCulloch, William M.	Rep.	Piqua
	5	*Clevenger, Cliff	Rep.	Bryan
	6	Polk, James G.	Dem.	Highland
	7	*Brown, Clarence J.	Rep.	Blanchester
	8	*Smith, Frederick C.	Rep.	Marion
	9	Burke, Thomas H.	Dem.	Toledo
	10	*Jenkins, Thomas A.	Rep.	Ironton
	11	*Brehm, Walter E.	Rep.	Millersport
	12	*Vorys, John M.	Rep.	Columbus
	13	*Weichel, Alvin F.	Rep.	Sandusky
	14	*Huber, Walter B.	Dem.	Akron
	15	Secrest, Robert T.	Dem.	Senecaville
	16	McSweeney, John	Dem.	Wooster
	17	*McGregor, J. Harry	Rep.	West Lafayette
	18	Hays, Wayne L.	Dem.	Flushing
	19	*Kirwan, Michael J.	Dem.	Youngstown
	20	*Feighan, Michael A.	Dem.	Cleveland
	21	*Crosser, Robert	Dem.	Cleveland
	22	*Bolton, Frances P.	Rep.	Lyndhurst
		Young, Stephen M.	Dem.	Cleveland
Okla.	1	Gilmer, Dixie	Dem.	Tulsa
	2	*Stigler, William G.	Dem.	Stigler
	3	*Albert, Carl	Dem.	McAlester
	4	Steed, Tom	Dem.	Shawnee
	5	*Monroney, A. S. Mike	Dem.	Oklahoma City
	6	*Morris, Toby	Dem.	Lawton
	7	Wickersham, Victor	Dem.	Mangum
	8	Wilson, George H.	Dem.	Enid
Ore.	1	*Norblad, Walter	Rep.	Astoria
	2	*Stockman, Lowell	Rep.	Pendleton
	3	*Angell, Homer D.	Rep.	Portland
	4	*Ellsworth, Harris	Rep.	Roseburg
Penn.	1	Barrett, William A.	Dem.	Philadelphia
	2	Granahan, William T.	Dem.	Philadelphia
	3	*Scott, Hardie	Rep.	Philadelphia
	4	Chudoff, Earl	Dem.	Philadelphia
	5	Green, William J., Jr.	Dem.	Philadelphia
	6	*Scott, Hugh D., Jr.	Rep.	Philadelphia
	7	James, Benjamin F.	Rep.	Villanova
	8	*Lichtenwalter, Franklin H.	Rep.	Allentown
	9	*Dague, Paul B.	Rep.	Downingtown
	10	O'Neill, Harry P.	Dem.	Dunmore
	11	Flood, Daniel J.	Dem.	Wilkes-Barre
	12	*Fenton, Ivor D.	Rep.	Mahanoy City
	13	Rhodes, George M.	Dem.	Reading
	14	*Gillette, Wilson D.	Rep.	Towanda
	15	*Rich, Robert F.	Rep.	Woolrich
	16	*McConnell, Samuel K., Jr.	Rep.	Penn Wynne
	17	*Simpson, Richard M.	Rep.	Huntingdon
	18	*Kunkel, John C.	Rep.	Harrisburg
	19	*Gavin, Leon H.	Rep.	Oil City
	20	*Walter, Francis E.	Dem.	Easton
	21	Lind, James F.	Dem.	York
	22	*Van Zandt, James E.	Rep.	Altoona
	23	Cavalcante, Anthony	Dem.	Uniontown
	24	*Morgan, Thomas E.	Dem.	Fredericktown
	25	*Graham, Louis E.	Rep.	Beaver
	26	Saylor, John P.[8]	Rep.	Johnstown
	27	*Kelley, Augustine B.	Dem.	Greensburg
	28	*Kearns, Carroll D.	Rep.	Farrell
	29	Davenport, Harry J.	Dem.	Pittsburgh
	30	*Corbett, Robert J.	Rep.	Bellevue
	31	*Fulton, James G.	Rep.	Dormont (Pittsburgh)
	32	*Eberharter, Herman P.	Dem.	Pittsburgh
	33	*Buchanan, Frank	Dem.	McKeesport
R.I.	1	*Forand, Aime J.	Dem.	Cumberland
	2	*Fogarty, John E.	Dem.	Harmony
S.C.	1	*Rivers, L. Mendel	Dem.	Charleston
	2	Sims, Hugo S.	Dem.	Orangeburg
	3	Hare, James B.	Dem.	Saluda
	4	*Bryson, Joseph R.	Dem.	Greenville
	5	*Richards, James P.	Dem.	Lancaster
	6	*McMillan, John L.	Dem.	Florence
S.D.	1	Lovre, Harold O.	Rep.	Watertown
	2	*Case, Francis	Rep.	Custer
Tenn.	1	*Phillips, Dayton E.	Rep.	Elizabethton
	2	*Jennings, John, Jr.	Rep.	Knoxville
	3	Frazier, James B., Jr.	Dem.	Chattanooga

ate	Dist.	Name	Party	Residence
enn.	4	*Gore, Albert	Dem.	Carthage
	5	*Evins, Joe L.	Dem.	Smithville
	6	*Priest, J. Percy	Dem.	Nashville
	7	Sutton, Pat	Dem.	Lawrenceburg
	8	*Murray, Tom	Dem.	Jackson
	9	*Cooper, Jere	Dem.	Dyersburg
	10	*Davis, Clifford	Dem.	Memphis
exas	1	*Patman, Wright	Dem.	Texarkana
	2	*Combs, J. M.	Dem.	Beaumont
	3	*Beckworth, Lindley	Dem.	Gladewater (R.F.D.)
	4	*Rayburn, Sam	Dem.	Bonham
	5	*Wilson, J. Frank	Dem.	Dallas
	6	*Teague, Olin E.	Dem.	College Station
	7	*Pickett, Tom	Dem.	Palestine
	8	*Thomas, Albert	Dem.	Houston
	9	*Thompson, Clark W.	Dem.	Galveston
	10	Thornberry, Homer	Dem.	Austin
	11	*Poage, W. R.	Dem.	Waco
	12	*Lucas, Wingate H.	Dem.	Grapevine
	13	*Gossett, Ed	Dem.	Wichita Falls
	14	*Lyle, John E., Jr.	Dem.	Corpus Christi
	15	*Bentsen, Lloyd M., Jr.	Dem.	McAllen
	16	*Regan, Ken	Dem.	Midland
	17	*Burleson, Omar	Dem.	Anson
	18	*Worley, Eugene	Dem.	Shamrock
	19	*Mahon, George H.	Dem.	Colorado City
	20	*Kilday, Paul J.	Dem.	San Antonio
	21	*Fisher, O. C.	Dem.	San Angelo
tah	1	*Granger, Walter K.	Dem.	Cedar City
	2	Bosone, Reva Beck	Dem.	Salt Lake City
t.		*Plumley, Charles A.	Rep.	Northfield
a.	1	*Bland, Schuyler Otis	Dem.	Newport News
	2	*Hardy, Porter, Jr.	Dem.	Churchland
	3	*Gary, J. Vaughan	Dem.	Richmond
	4	*Abbitt, Watkins M.	Dem.	Appomattox
	5	*Stanley, Thomas B.	Dem.	Stanleytown
	6	*Burton, Clarence G.	Dem.	Lynchburg
	7	*Harrison, Burr P.	Dem.	Winchester
	8	*Smith, Howard W.	Dem.	Alexandria
	9	Fugate, Tom B.	Dem.	Ewing
Vash.	1	Mitchell, Hugh B.	Dem.	Seattle
	2	*Jackson, Henry M.	Dem.	Everett
	3	*Mack, Russell V.	Rep.	Hoquiam
	4	*Holmes, Hal	Rep.	Ellensburg
	5	*Horan, Walt.	Rep.	Wenatchee
	6	*Tollefson, Thor C.	Rep.	Tacoma
V.Va.	1	Ramsey, Robert L.	Dem.	Follansbee
	2	Staggers, Harley O.	Dem.	Keyser
	3	Bailey, Cleveland M.	Dem.	Clarksburg
	4	Burnside, M. G.	Dem.	Huntington
	5	*Kee, John	Dem.	Bluefield
	6	*Hedrick, E. H.	Dem.	Beckley
Vis.	1	*Smith, Lawrence H.	Rep.	Racine
	2	*Davis, Glenn R.	Rep.	Waukesha
	3	Withrow, Gardner R.	Rep.	La Crosse
	4	Zablocki, Clement J.	Dem.	Milwaukee
	5	Biemiller, Andrew J.	Dem.	Milwaukee
	6	*Keefe, Frank B.	Rep.	Oshkosh
	7	*Murray, Reid F.	Rep.	Ogdensburg
	8	*Byrnes, John W.	Rep.	Green Bay
	9	*Hull, Merlin	Rep.	Black River Falls
	10	*O'Konski, Alvin E.	Rep.	Mercer
Vyo.		*Barrett Frank A.	Rep.	Lusk

[1] Elected Nov. 8, 1949, to fill the vacancy caused by the death of Richard J. Welch, ept. 10, 1949.

[2] Caused by the death of Martin Gorski, Dec. 4, 1949.

[3] Caused by the death of George J. Bates, Nov. 1, 1949.

[4] Caused by the resignation of J. Parnell Thomas, Jan. 2, 1950.

[5] Elected Feb. 15, 1949, to fill the vacancy caused by the death of John J. Delaney, ov. 18, 1948.

[6] Elected Nov. 8, 1949, to fill the vacancy caused by the death of Andrew L. Somers, pr. 6, 1949.

[7] Elected May 17, 1949, to fill the vacancy caused by the death of Sol Bloom, Mar. 7, 949.

[8] Elected Sept. 13 1949, to fill the vacancy caused by the death of Robert L. Coffey, Jr., pr. 20, 1949.

Congress of Industrial Organizations: *see* LABOUR UNIONS.

Connally, Tom (Thomas Terry) (1877–), U.S. senator, was born ug. 19 in McLennan county, Tex., and graduated from Baylor niversity, Waco, Tex., and from the University of Texas, ustin, Tex. He was elected to the Texas house of representatives in 1900 and again in 1902. In 1916 he was elected to the .S. house of representatives, where he served for six successive terms. He was elected to the U.S. senate in 1928 and was re-elected in 1934, 1940 and 1946. At the close of World War II, during most of which he served as chairman of the senate foreign relations committee, he attended the United Nations Conference on International Organization at San Francisco, Calif., as vice-chairman of the U.S. delegation, and he was also a delegate to the first U.N. general assembly meeting in London, England, early in 1946. He attended the Council of Foreign Ministers session in Paris, France, in 1946 and the peace conference in Paris the same year. When the Republican party gained control of the 80th congress, Connally, a Democrat, relinquished the chairmanship of the senate foreign relations committee, but during that time worked with Republican Senator Arthur H. Vandenberg on a bipartisan approach to foreign policies. Early in 1949 he resumed the chairmanship and steered the North Atlantic treaty through the senate, in addition to the $5,430,000,000 European aid bill and the Military Assistance program to implement the Atlantic treaty.

Connecticut. One of the 13 original states and the southwesternmost of the New England states, popularly known as the "Nutmeg state," the "Land of Steady Habits" or the "Constitution state," Connecticut has an area of 5,009 sq.mi., including 110 sq.mi. (approx.) of water. Its population (1940) was 1,709,242; a bureau of the census estimate of July 1, 1949, placed its population at 2,019,000, an 18.1% gain. Population figures (1940 census) for the principal cities included: Hartford, the capital, 166,267; New Haven, 160,605; Bridgeport, 147,121; Waterbury, 99,314; New Britain, 68,685; and Stamford, 61,215.

History.—The regular session of the general assembly met Jan. 5, 1949, and adjourned at the constitutional deadline, June 8. In addition, three special sessions were called by Gov. Chester Bowles: the first, June 14–30; the second, Oct. 5–6; and the third, Nov. 9–Dec. 2. The first special session was adjourned by proclamation. The Republican controlled house refused to recognize this procedure and met July 6 in a so-called "rump" session, passed several acts and then recessed, subject to the call of the speaker of the house. The governor refused to act on the measures passed, but the house still claimed to be recessed and met at the second special session at the call of the speaker of the house as well as that of the governor.

In all these sessions there were frequent deadlocks and periods of inactivity since the governor and senate (23 to 13) were Democratic, and the house (179 to 93), Republican. The house, therefore, had veto power on all those measures which required the approval of both branches of the general assembly.

Despite this situation, the administration secured enactment of a fair amount of its program through compromise. In the field of education, $22,350,000 was appropriated to aid towns and school districts in meeting increased expenses in operating schools; $3,200,000 was appropriated for remodelling and for new buildings at the state university. A bond issue of $7,000,000 for the biennium was authorized for the building of vocational-technical schools. A bond issue of $4,000,000 was authorized for the expansion of teachers' college facilities.

In the field of welfare, benefits to the permanently incapacitated worker were extended from 10 yr. to 12 yr. Allowances to dependent children of a man killed on the job were increased from $3.50 to $5.00. Workmen's compensation coverage was extended to employers of three or more men, instead of five or more; the period for which a worker could draw benefits was extended from 22 weeks to 26 weeks. Discrimination in pay between a man and a woman performing identical work with equal skill was prohibited. The limitation on payments for old-age assistance, minors and blind persons was removed, and payments were to be based on the need of the individual. A bond issue of $17,000,000 was authorized to improve and enlarge the facilities of the state's humane and welfare institutions, including the state prison.

Taxes on the manufacture and sale of margarine were repealed, and its use in state institutions was authorized although the legislature refused to permit the sale of coloured margarine.

Legislation was enacted adding $20,000,000 to the already authorized $45,000,000 aid to local housing authorities for low-income rental units and providing $30,000,000 for low and moderate "for sale" units.

In the confusion of the last day's business, the general assembly adjourned June 8 without final action on the state budget. The governor immediately called a special session for June 14 to act on this. A general fund budget of $230,342,900 was finally approved.

The second special session was necessary to correct a technicality which had been found in the housing bill.

The third special session was called by Governor Bowles to take up the question of state aid for local school building programs. The governor favoured a bond issue, but the Republican controlled house wanted any aid to come out of current revenue. Finally a compromise was agreed upon, under which the state would pay roughly one-third of the cost of the new schools financed by the towns by local bond issues.

State officers in 1949 included: governor, Chester Bowles; lieutenant governor, William T. Carroll; secretary of state, Mrs. Winifred McDonald; treasurer, Joseph A. Adorno; comptroller, Raymond S. Thatcher; attorney-general, William L. Hadden. Finis E. Engleman was state superintendent of education. On Dec. 5 Governor Bowles announced the appointment to the U.S. senate of William Benton, of Southport, to succeed Raymond E. Baldwin, who was to resign on Dec. 17 to become an associate justice of the state supreme court of errors.

Education.—The state department of education reported for the year ending June 30, 1949: 676 public elementary schools with 196,741 pupils and 6,781 teachers; 33 junior high schools with 15,590 pupils and 790 teachers; 90 public high schools with 62,679 pupils and 2,961 teachers; 206 parochial and ecclesiastical schools with 62,712 pupils and 2,591 teachers. The state expenditure on education, through the state board, was $11,409,994, and local expenditure, $56,626,855.

Social Insurance and Assistance, Public Welfare and Related Programs.—The state public welfare department reported that as of June 30, 1949, there were 64,393 persons in the state receiving assistance, compared with 48,855 the year before, an increase of 31.8%. The cost of this assistance in 1949 was $3,204,584, compared with $2,059,894 in 1948, an increase of 55.6%. The various types of assistance in June 1949 were: general local relief, 18,131 persons costing $546,100; old-age assistance, 16,846 persons costing $950,500; 12,186 persons in mental, feeble-minded and tubercular state institutions, costing $1,155,643; 11,992 dependent children costing $356,506; 3,282 county wards (6–18 yr.) costing $141,081; 2,097 state wards (under 6 yr.) costing $43,467; and aid to 263 blind, costing $11,287. The total expenditure by the state for the year ending June 30, 1949, for charities, hospitals and correctional institutions exceeded $33,000,000, and for health and sanitation, more than $1,300,000.

Communications.—The Federal Communications commission reported that in 1949 there were 27 standard AM broadcast stations in the state, 14 with frequency modulation (FM), 1 licensed television station and 2 experimental stations.

On Nov. 1, the tunnel through West Rock at New Haven was opened to the public, thus completing the 117 mi. highway from the New York line to the Massachusetts line.

There were 2,978 mi. of road in the state highway system, 880 of which were concrete. There were also 2,098 mi. of other kinds of improved roads. On July 1, there were 687,136 automobiles licensed and 793.616 drivers. Approximately 146 newspapers and periodicals were published in the state.

Banking and Finance.—The treasurer's report for the fiscal year ending June 30, 1949, showed the financial condition of the state as follows: cash balance July 1, 1948, $29,027,803.34; total receipts, year ending June 30, 1949, $274,665,512.94; total, $303,693,316.28; total payments, year ending June 30, 1949, $276,977,230.06; cash balance July 1, 1949, $26,716,086.22. The bonded debt, June 30, 1949, amounted to $82,230,000, and the bond retirement fund totalled $10,905,831.68. The bonded debt Nov. 1, 1949, was $86,265,000. The unemployment trust fund on deposit with the Federal Security agency, June 30, 1949, was $173,541,004.63.

The banking department reported that as of Sept. 30, 72 mutual savings banks had total assets of $1,490,317,790; 62 state banks and trust companies had assets of $819,612,100; 31 building or savings and loan associations had assets of $60,461,352; 7 industrial banks had assets $6,287,327; and 2 private banks had assets of $1,660,835. As of June 3 51 national banks had assets of $750,890,000.

Agriculture.—The department of farms and markets reported that t total cash receipts from farm marketing in 1948 were $184,104,000, compared with $151,133,000 (revised) in 1947. From commodity crop the receipts were $81,986,000; from livestock and livestock product $101,587,000; and government payments, $531,000.

Leading Agricultural Products of Connecticut

	1948	1947 (Revised)
Apples	$2,656,000	$3,018,00
Potatoes	6,145,000	5,298,00
Truck crops	6,086,000	5,870,00
Tobacco	53,743,000	31,049,00
Cattle and calves	8,603,000	6,736,00
Chickens (including broilers)	20,816,000	15,674,00
Eggs	26,202,000	26,644,00
Dairy products	41,909,000	39,706,00
Hogs	1,920,000	2,040,00

Manufacturing.—The business recession was especially severe in t manufacturing industries of the state during 1949, and several localiti were designated as "distress areas." At the height of the distress perio about mid-July, the state labour department reported that there we 106,200 persons unemployed, an 11-year peak. There were 693,82 workers in nonagricultural industries in Aug. 1949, compared with 773 910 in Aug. 1948. Average weekly earnings were $52.32, compared wi $56.02 in 1948. A preliminary report for September showed a defini drop in unemployment. (J. Br.)

Conservation, Soil: *see* SOIL EROSION AND SOIL CONSERVATION.

Conservative Party, Great Britain: *see* POLITICAL PARTIES, BRITISH.

Consumer Credit.

Consumer credit, as reflected by consumer debt statistics published by th board of governors of the federal reserve system, reached a unprecedented high in the United States during 1949, whe more than $18,000,000,000 of receivables were reported held b retail and service establishments and by consumer cash loa agencies. Not only was the amount of such debt unequalle but the rate of its growth was likewise notable, for during th past decade this type of consumer debt had doubled, and sinc 1943, a wartime year when it was abnormally low, it ha increased threefold.

The increase of total consumer debt since World War II wa attributable almost entirely to the increase of instalment deb particularly that arising from the sale of automobiles. Durin postwar years, charge accounts outstanding increased but slightly, and on the whole the volume of all noninstalment deb remained remarkably constant.

Notwithstanding the marked growth of consumer debt i absolute amount, its increase was relatively less than the overall growth of the entire economy since 1939. Consumer deb increased, but so also did the means of paying debt and th general setting in which the debt arose. It is true that wherea consumer debt in 1939 was $7,000,000,000, in 1949 it was $18 000,000,000. Nevertheless, while such debt increased to 2.5 times what it had been a decade before, personal disposable income remaining after payment of taxes was, in 1949, 2.75 time what it had been in 1939. Similarly, personal savings made during 1949 were more than six times as much as they were in 193 Thus, while consumer debt experienced tremendous growth during the decade, this should be cause neither for alarm nor f superficial criticism of the role of consumer credit in th economy.

The quantity of consumer debt outstanding is no more significant than its qualitative aspects, and in 1949, in addition attaining unprecedented volume, consumer credit also manifested certain characteristics attributable to circumstances peculiar to that year. During 1949, consumer credit terms we liberalized and collections were retarded, as a result of increase competition among sellers for consumer purchases and th expiration of legal restraints imposed by the federal government upon instalment sales.

On the one hand, terms were affected by increased competition, which, in turn, reflected the growing availability of consumer durable goods following the war and the curtailed demand resulting from reductions in employment and in factory pay rolls. Pressures upon sellers also arose from threats of economic instability hinted by a declining rate of physical production and by a drop in many wholesale and retail prices. In order to open broader markets and to appeal more effectively to marginal income groups, easy credit terms were offered widely.

On the other hand, the expiration of regulation W, providing through federal authority for minimum down payments and maximum credit periods, accentuated the trend toward competition in credit terms. The abandonment of credit regulation, however, was gradual. Reinstated as of Sept. 20, 1948, following a brief lapse, regulation W was partially relaxed March 7, 1949, when the maximum maturity on all consumer instalment contracts was made uniformly 21 months, instead of 15 to 18 months, and the required down payment was reduced from 20% to 15%, except in the case of automobiles, where the down payment remained at 33⅓%. The regulation was further relaxed as of April 27, 1949, when down payments for articles other than automobiles were further reduced to 10% and all maximum maturities were increased to 24 months. At the same time, all sales amounting to less than $100 were thereafter exempted from regulation. Finally, on June 30, the authority of the federal reserve board to regulate consumer credit expired, and sellers were again free to set what terms they deemed best and necessary for the conduct of their business.

The predictable effect of the passing of legal restraints upon consumer credit, especially in the face of tightening sales conditions, was a noticeable breaking away from prevailing terms. This, of course, was the case mainly in instalment credit, for charge account regulation expired in 1948 with little evident effect upon that form of credit. In the instalment field, however, the termination of regulation was accompanied by the general elimination of down payments on radios, television sets, refrigerators, furniture and the like, and by the common extension of the payment period up to 24 months. Terms on automobile credit were made easier than for most other commodities. In the case of soft goods, too, credit terms were liberalized by the elimination of the down payment and the extension of time to from 6 to 12 months.

Another development in consumer credit was the slowing down of the rate of collections. This was particularly characteristic of lines of trade where sales were in large measure made on instalment credit. Within a 12-month period, for example, monthly ratios of collections to beginning-of-month outstandings dropped 22% in furniture stores, 24% in household appliance stores and 19% in jewellery stores. Department stores, on the other hand, fared somewhat better, for there appeared to be no appreciable change in the collection of either their instalment or charge accounts during the same period of 1949. (*See* also Federal Reserve System.) (R. Ba.)

Canada.—Rising 1949 prices increased the cost of living and the pressures were reflected in moderate but definite increases in consumer credit. According to the dominion bureau of statistics, by July, 11 of the 15 major retail trades were showing a decreased ratio of cash to credit sales; 7 of the 10 normal instalment trades were showing an increased ratio of credit to cash sales. Cash sales stood at 63.3% in July 1949, compared with 67% in July 1945. In general, instalment sales (except in furnishings and furs) were almost back to pre-1939 levels, though department stores reported that credit purchases as a proportion of total sales were 1% above 1939. Collection agencies revealed that the delinquent ratio of accounts was 2½%. The retail clothing trade took tentative steps to provide a central credit plan so that small retailers might benefit from instalment sales in the same way as clothing sections of department stores.

Easier credit began to appear in the new and used car fields in an effort to boost sales.

The consumer credit picture in New Brunswick presented a special aspect of the national situation. Instalment buying soared dangerously throughout the province under the impact of a British-operated chain department store that offered a wide range of goods at very low weekly rates: $1 a week for $150 worth of merchandise, $2 for $300 worth and up to $4 for $600 worth. To combat the effects of such competition, other retail outlets successfully lobbied for provincial legislation which called for 15% down payments and a maximum of 24 months to pay.

The royal commission on prices which sat during 1948 presented a three-volume report early in 1949. Pages 289–306 of vol. 3 summed up the commission's findings which labelled consumer credit "a significant economic factor," reported that the consumer was generally unaware of what he actually paid for credit, and noted its increase. The total cash and commodity credit outstanding in Canada was: 1941, $675,900,000; 1947, $947,500,000; at June 1948, more than $1,000,000,000. (C. Cy.)

Great Britain.—During 1949 traders in all parts of Great Britain reported a substantial increase in the demands that were being made upon them for credit facilities for the purchase of consumer goods. The tendency for the situation to change in this way had become apparent in 1948, but during 1949 it became much more marked. Not only had the surplus of ready money in the hands of the purchasing public, which had accumulated by reason of savings during the war years and by the payment of service gratuities, become exhausted, but there was a very much larger variety of goods on the market competing for such cash as was still available.

Although the increase was not confined to any one particular type or method of consumer credit granting, it was probably most marked in the instalment-purchase field. Such items as furniture, domestic appliances, radios, refrigerators, bicycles and motorcycles were largely sold on this system, and traders handling these lines in some districts reported that unless they could extend credit to their customers they would be unable to keep their stocks turned over.

In August and again in September, restrictions were relaxed on a considerable number of articles which, until then, had prevented the making of a service charge for instalment purchase or credit sale transactions. The easing of this control enabling a further range of goods to be sold on instalment-purchase terms also contributed to the increase in the amount of consumer credit that was granted during the year.

The increase, large as it was, would probably have been even greater had it not been for the continuation of the policy laid down by the treasury some years previously restricting the amount of finance which could be made available for instalment-purchase transactions on consumer goods. Before World War II a high percentage of such transactions had been financed not by the retailer himself but by the banks or by the specialized finance houses. The effect of the treasury restriction made it impossible for these sources to accept all the increased business offered to them, and some retailers reported that they were unable to grant any further instalment-purchase credit because they themselves were unable to obtain the additional financial backing they required.

An increase was also noticed in the length of credit being granted. On open credit accounts, longer time was required before the account was to become due for payment, and those customers who were discussing instalment purchase agreements were found, in a high percentage of cases, to ask for the agreement to be drawn so as to cover a longer period than would have been the case a year or so previously.

During the year, collections on amounts outstanding appeared on the whole to be satisfactory, although in one or two quarters a tendency to slowness was reported. The full employment of the community, which had continued throughout the year, was obviously an important factor in bringing this about and, where proper care had been exercised in checking the credit standing of the customer prior to the opening of the account, overdues were not high. (C. C. Ws.)

Contract Bridge. In the United States, bridge news was perhaps overshadowed by the emergence of the new card game canasta (*q.v.*). Never before had contract bridge been threatened as the nation's favourite social card game in America. But despite the competition, there seemed to be about as much bridge played as in any previous year, and attendance at tournaments continued to increase.

In January new laws for duplicate bridge were released. For the first time, these laws were an international code, adopted by the European Bridge league's members as well as in the western hemisphere.

In bidding, the principal development was the espousal of point-count valuation by Charles Goren of Philadelphia, Pa., one of the principal authorities. Under this method, based on calculations originally made by W. M. Anderson of Toronto, Can., each ace is counted as 4 points, king 3, queen 2, knave 1; 1 point is added for each doubleton in the hand, 2 for each singleton, 3 for each void. A hand of 14 points or slightly less is considered biddable, and a combined partnership count of 26 or more justifies bidding game.

In November the New York metropolitan women's pair championship was won by a Negro pair, Doris Brooks and Geraldine Gibson, and Mrs. Brooks also won the mixed-pair contest, paired with a white partner, M. C. Keller.

Winners in the principal American Contract Bridge league tournaments in 1949 were:

Masters' Championships: Individual, George Rapee, New York, N.Y. Pairs, Leo Roet, New York, N.Y., and Ruth Gilbert, Philadelphia, Pa. Teams, Alvin Landy and Sol Mogal, New York, N.Y., Arthur Goldsmith, Cleveland, O., Jeff Glick, Miami, Fla., and Bruce Gowdy, Toronto, Ont., Can. Mixed pairs, John Crawford, Philadelphia, Pa., and Margaret Wagar, Atlanta, Ga. Mixed teams, Mr. and Mrs. Charles J. Solomon and Mrs. R. C. Young, Philadelphia, Pa., and Peter Leventritt, New York, N.Y.

National Championships: Individual, Sol Seidman, Brooklyn, N.Y. Pairs, Charles Whitebrook, New York, N.Y., and Gardner Goldsmith, Philadelphia, Pa. Teams, cumulative scoring (Harold S. Vanderbilt cup), Lee Hazen, Charles Lochridge, Morrie Elis, Harry J. Fishbein and Lawrence Hirsch, New York, N.Y. Teams, match-point scoring, tie among three teams: Landy, Mogal, Goldsmith, Glick and Elmer Schwartz of Cleveland, O.; E. N. Marcus and Sidney Aronson, Boston, Mass., Mrs. J. E. Folline, Richmond Va., L. J. Kabakjian, Philadelphia, Pa., and B. O. Johnson, Spartanburg, S.C.; Hazen, Leventritt, Hirsch, Jack Shore and Richard Kahn, New York, N.Y. Men's pairs, Oswald Jacoby, Dallas, Tex., and Charles H. Goren, Philadelphia, Pa. Women's pairs, Ruth Sherman and Mrs. Lester Rhodes, New York, N.Y. Mixed pairs, Mr. and Mrs. Arnold Kauder, San Diego, Calif. Men's teams, Roet, Howard Schenken, Alphonse Moyse and Maurice Levin, New York, N.Y. Women's teams, tie between two teams: Mrs. L. C. Robinson, Mrs. Henry Sabott, Mrs. R. H. Sondheim and Mrs. C. T. Evans, Philadelphia, Pa.; Mrs. E. T. Carter, Mrs. Ernest Boschan and Kathleen McNutt, Washington, D.C., and Mrs. F. Eberson, Memphis, Tenn. Mixed teams, Helen Cale and Jack Ehrlenbach, San Francisco, Calif., and Mr. and Mrs. Arnold Kauder, San Diego, Calif. (E. CUL.; A. H. MD.)

Europe.—For the second year in succession the winners and runners-up in the European championship of 1949 were respectively Great Britain and Sweden; Denmark finished third. The contest was played in Paris from July 4–10, 11 countries taking part. The British team was M. Harrison Gray, K. W. Konstam, L. Dodds, E. Rayne, B. Shapiro, T. Reese and A. Meredith. The women's event was won by Denmark (winners in 1948 also) with France second and Italy third. Great Britain, whose team was Mrs. A. L. Fleming, Mrs. F. Gordon, Lady Rhodes Mrs. L. Litante, Mrs. P. Williams and Mrs. M. Lester, finished fourth.

A champion team from America, S. Stayman, G. Rapee, J Crawford and P. Leventritt, played a match in London during May for the Crowninshield cup, presented by an American for a contest between the leading English and American players The English players, who won by a narrow margin, were M Harrison Gray, K. Konstam, B. Shapiro, T. Reese, Ewart Kempson, L. Dodds, E. Rayne, J. Pavlides, G. Mathieson and Mrs. R. Marcus. The first four, who represented Crockford's club, gained a lead of 2,950 in the first half of the match. The American team also lost to the Lyndhurst club, whose team was L. Tarlo, H. Franklin, H. Leist, A. Meredith, M. Rockfelt and A. Rose.

For the first time in the history of the Gold cup, Britain's premier team contest, a Scottish side reached the final. The cup was, however, won by Graham Mathieson's London team The annual North-South contest was won by the south who now led 7–6 in the series. The international contest between England, Scotland, Wales, Northern Ireland and the Bridge association of Ireland, was won by England.

(E. KN.)

Co-operatives. In 1949 there were about 10,000,000 members of various types of U.S. co-operative including agricultural marketing associations, credit co-operatives or credit unions, consumer co-operatives, insurance, housing, health and medical care, publication and broadcasting and other enterprises.

The outstanding development of co-operatives in 1949 was an increase in co-operative housing and a drive for legislation in middle-income housing. At the close of 1949 more than 100 co-operative housing projects were in operation, serving about 30,000 families. These projects included all types of homes from city apartment houses in New York to small ten-family project of individual homes in rural and suburban areas.

In the field of medical co-operatives, the Cooperative Health Federation of America and the American Medical association reached a working agreement on the role of co-operative and prepayment medical care in the U.S. economy, and a number of new co-operative health associations were established. Membership continued to increase in prepaid medical care plans and co-operative hospitals, the largest of which was the Group Health association in Washington, D.C.

In retail food distribution about 1,000 co-operative stores handled a volume of business estimated at about $100,000,000 at retail, with units from Massachusetts to California.

Consumer Co-Operatives in the U.S., Jan. 1950

Type of associations	Number of Associations	Membership	Volume of business
Commodity co-ops			
Co-operative stores	2,400	1,356,000	$ 828,000,000
Service stations	2,500	960,000	385,000,000
Farm supply	1,353	710,000	480,000,000
Other	80	38,000	16,500,000
	6,333	3,064,000	$1,709,500,000
Service Co-ops			
Medical associations	130	198,000	$ 10,825,000
Funeral associations	41	30,300	499,000
Housing	125	13,000	3,000,000
Campus co-ops	180	22,000	6,000,000
Miscellaneous	125	25,000	1,800,000
	601	288,300	$ 22,124,000
Specialized consumer co-ops			
Rural electric co-ops	815	2,404,000	$ 137,000,000
Credit unions	9,329	3,749,000	633,784,000
Telephone	33,000	675,000	10,000,000
Co-operative insurance*	8	1,150,000	51,000,000
	43,142	7,978,000	$ 831,784,000

*Includes only those organizations affiliated with the Cooperative League of US Mutual insurance companies reported by the U.S. bureau of labour statistics include 2,000 associations, with 11,300,000 members and business of $207,500,000.

Farm supply co-operatives continued to be the largest single lume business in the consumer co-operative field, with sales nearly $1,000,000,000 in seed, feed, fertilizer, farm machin- y and other farm supplies.

Marketing co-operatives represented more than half of the S. families with a volume of business of more than $3,000,- 0,000. There were 13 major fields of marketing, including iry products, grain, citrus fruits, wool, poultry products and forth.

Internationally the co-operatives continued to make headway. e largest—Cooperative for American Remittances to Europe, tter known as CARE—had distributed nearly $100,000,000 rth of relief packages (food and textiles) abroad since it was tablished late in 1945. Another, the International Cooperative troleum association, was completing its second year of opera- n and was shipping petroleum products from the co-opera- ves in the U.S. to co-ops in South Africa, Australia, New Zea- nd, France, Scotland and Yugoslavia and many other countries. (W. J. Cl.)

Great Britain.—In 1948 retail sales amounted to £490,000,- 0, as compared with £434,000,00 in 1947. Trading surplus, at 5,921,000, was a little lower than in 1947, despite increased les, because of price-cutting at the government's request, a licy which could not be sustained when it threatened seriously affect dividends on purchases without leading to any large in- eases in membership. Dividends on purchases, at £35,461,000, ere nearly the same as in 1947, but at a reduced rate on the £1 sales. The co-operative wholesale societies of all types in- eased sales from £293,000,000 to £331,000,000, but trading rpluses fell from £14,000,000 to £12,000,000. The total pro- uction value of all co-operative productive agencies was £181,- 6,000, as against £157,569,000 in 1947.

The principal development in British co-operation during 49 was the inauguration of "national membership," to which ost of 1,000 retail societies were parties. This system was de- gned to enable any member of a participating society to re- ive dividends on purchases made at any such society's shops.

Other Countries.—No conference of the International Co- erative alliance, which still included countries of eastern Eu- pe as well as of the west, was held during 1949. In the inter- tional field the main events were a considerable expansion of e revived co-operative movement in western Germany, a further owth of co-operatives in the British colonies, especially in est Africa, and an increase in educational work, especially in aining co-operative leaders for work in the less advanced eas.

East of the "iron curtain," there was a further rapid growth state-controlled agricultural co-operatives in the satellite ates and also in Yugoslavia. In Palestine the Israeli govern- ent continued to promote co-operative enterprise.

FILMS OF 1949.— *The Rising Tide* (National Film Board of Canada); *hat is a Co-op?* (Cooperative League). (G. D. H. C.)

opper.

World production of copper was gradually recovering from the postwar slump. The 1948 total was 4% more than the 1939 level, but was still short of the war peak by a similar percentage. The outputs of the major producing countries and the world totals during recent years are shown in Table I.

Table I.—*World Mine Production of Copper*

(Thousands of short tons)

	1943	1944	1945	1946	1947	1948
lgian Congo . .	173.0	182.4	176.6	158.6	166.2	171.4
nada	287.6	273.5	237.5	184.0	225.9	239.9
ile	561.5	549.5	492.1	395.5	456.9	494.2
exico	54.9	45.5	68.0	67.3	71.4	65.1
ru	36.8	35.7	35.2	27.1	24.8	20.0
. Rhodesia . . .	284.8	248.8	219.7	211.1	217.5	249.7
S.S.R.	143?	149?	154?	165?	182?	198?
ited States . . .	1,090.8	972.5	772.9	608.7	847.6	834.8
Total . . .	2,990	2,781	2,360	2,035	2,440	2,560

Table II.—*Data of Copper Industry in the U.S.*

(Thousands of short tons)

	1943	1944	1945	1946	1947	1948
Mine output	1,090.8	972.5	772.9	608.7	847.6	834.8
Smelter output . . .	1,092.9	1,003.4	782.7	599.7	862.9	842.5
Refinery output . .	1,379.3	1,221.2	1,108.6	878.7	1,160.0	1,107.4
Domestic ore . .	1,082.1	973.9	775.7	578.4	909.2	860.0
Foreign ore . . .	297.2	247.3	332.9	300.2	250.8	247.4
Secondary recovery	1,086.0	950.9	1,006.5	803.5	961.7	972.8
From old scrap .	427.5	456.7	497.1	406.5	503.4	505.5
From new scrap .	658.5	494.2	509.4	397.1	458.4	467.3
Imports	716.7	785.4	853.2	393.3	413.9	507.3
Refined.	402.8	492.4	531.4	154.4	149.5	249.1
Exports.	294.5	237.5	132.6	97.5	197.0	206.6
Available for use* .	1,915.1	1,932.8	2,004.5	1,342.1	1,615.9	1,656.4

*Available for use includes total refinery output, secondary from old scrap, and refined imports less exports; secondary from new scrap is only a turnover of metal in process and does not add to the supply available for use, and other imports have been covered in refined output from foreign ores.

Table III.—*Mine Production of Copper in U.S.*

(Thousands of short tons)

	1943	1944	1945	1946	1947	1948
Arizona . . .	403.2	358.3	287.2	289.2	366.2	375.1
California . .	8.8	12.7	6.5	4.2	2.4	0.5
Colorado . . .	1.0	1.0	1.5	1.8	2.2	2.3
Idaho	2.3	1.7	1.5	1.0	1.6	1.6
Michigan . . .	46.8	42.4	30.4	21.7	24.2	27.8
Missouri . . .	1.3	3.3	3.4	1.9	1.8	2.4
Montana . . .	134.5	118.2	88.5	58.5	57.9	58.3
Nevada . . .	71.1	61.2	52.6	48.6	49.6	45.2
New Mexico .	76.2	69.7	56.6	50.2	60.2	74.7
Utah	324.0	282.6	226.4	114.3	266.5	227.0
Washington . .	7.3	6.2	5.8	4.5	2.2	5.7
Others	14.4	15.2	12.5	12.8	12.7	14.3
Total .	1,090.8	972.5	772.9	608.7	847.6	834.8

Incomplete smelter reports for 1949 indicated appreciable gains in output in Canada, Germany, Japan and Northern Rhodesia, but these were largely offset by declines in Chile and the United States, and little improvement could be expected in the yearly total.

Demand exceeded supply until well into 1949, when a reversal of the trend was marked by a sharp drop in prices.

United States.—The salient features of the copper industry in the United States during the past several years are shown in Table II, while mine output by states is shown in Table III.

The 1948 output fell somewhat short of that of 1947 because of strikes in the industry, though the decreased ore tonnage was partly offset by a small increase in copper content of the ore. The decline in domestic output was more than offset by increased imports, giving small increase in total supply above that of 1947.

In 1949 the mine output suffered further declines, partly from labour stoppages and partly from a cut in working time from 48 to 40 hr. per week. Mine production during the first three-quarters of 1949 totalled 557,581 tons, a reduction of 11% from the average monthly rate in 1948.

Canada.—Primary copper production advanced from 225,861 tons in 1947 to 240,732 tons in 1948, and continued to improve at about the same rate in 1949 with a total of 172,925 tons through August. Small tonnages of ore and concentrates are exported, but the bulk of the output is converted into refined copper. Refinery output increased from 202,427 tons in 1947 to 221,275 tons in 1948 and 151,985 tons in the first eight months of 1949. (*See* also MINERAL AND METAL PRODUCTION AND PRICES.) (G. A. Ro.)

Corn

(MAIZE). The 1949 U.S. corn crop of 3,377,790,000 bu. was the second largest on record, 8% below the 3,681,793,000 bu. of 1948, but 21% above average. The large 1949

Table I.—*The U.S. Corn Crops*

	1949	1948	1947	Average, 1938–47
Total production (thousands of bu.) .	3,377,790	3,681,795	2,400,952	2,787,628
Acreage harvested (thousands) . . .	86,735	86,067	83,981	88,617
Yields (bushels per acre)	38.9	42.8	28.6	31.4

Table II.—*U.S. Corn Production by Leading States*

(In thousands of bushels)

State	1949	1948	Average 1938–47	State	1949	1948	Average 1938–47
Iowa	553,847	677,056	507,760	Georgia . . .	59,400	49,182	45,255
Illinois	518,112	564,372	398,442	Texas	58,208	44,698	67,694
Minnesota . .	248,512	272,055	203,090	Alabama . . .	57,456	58,824	43,596
Indiana . . .	247,052	285,060	196,245	Virginia . . .	53,580	50,525	36,520
Nebraska . .	239,330	252,468	180,307	Mississippi . .	47,725	53,544	43,506
Ohio	202,552	215,924	160,389	South Carolina .	31,590	28,360	25,235
Missouri . .	173,963	201,110	128,558	New York . .	29,610	27,120	24,063
Wisconsin . .	129,800	113,252	101,106	Oklahoma . .	29,392	32,125	28,382
Kentucky . .	88,762	100,040	70,856	Arkansas . . .	28,368	34,052	31,979
Michigan . .	85,920	67,119	55,653	North Dakota .	23,361	29,380	24,157
South Dakota	82,824	131,472	79,028	Louisiana . . .	18,446	17,057	20,296
North Carolina	75,565	69,006	53,124	Maryland . .	18,354	19,032	16,382
Kansas . . .	73,196	81,304	61,169	Colorado . . .	17,314	14,304	13,902
Tennessee . .	68,900	74,415	63,487	West Virginia .	11,748	13,068	11,772
Pennsylvania	64,077	65,379	54,239	New Jersey . .	8,145	9,650	7,412

crop plus the record carry-over of 815,000,000 bu. provided a total supply about 400,000,000 bu. larger than the 1948 record.

Acreage harvested was 86,735,000 compared with 86,067,000 in 1948 and 88,617,000 average for the decade 1938–47. Average yields per acre declined to 38.9 bu. against 42.8 bu. in 1948, but only 31.4 bu. average for 1938–47.

Corn prices fluctuated erratically during the year at a level well below the average government loan rate to farmers of $1.44 per bushel on the 1948 crop and $1.40 per bushel on the 1949 crop; from $1.25 per bushel in January the average price received by producers broke to $1.12 in February, recovered to $1.25 in July, declined to a harvesttime low of $1.02 per bushel in November, then increased again. The secretary of agriculture late in December ordered production controls on the 1950 corn crop, calling for a cut of 11,000,000 ac. to provide a goal of 2,627,000,000 bu.

The world corn crop of 1949–50 was estimated at 5,680,000,000 bu., second only to the record crop of 5,990,000,000 bu. in 1948–49, and much in excess of the prewar average of 4,750,000,000 bu. (*See* also FOOD SUPPLY OF THE WORLD; VEGETABLES.) (J. K. R.)

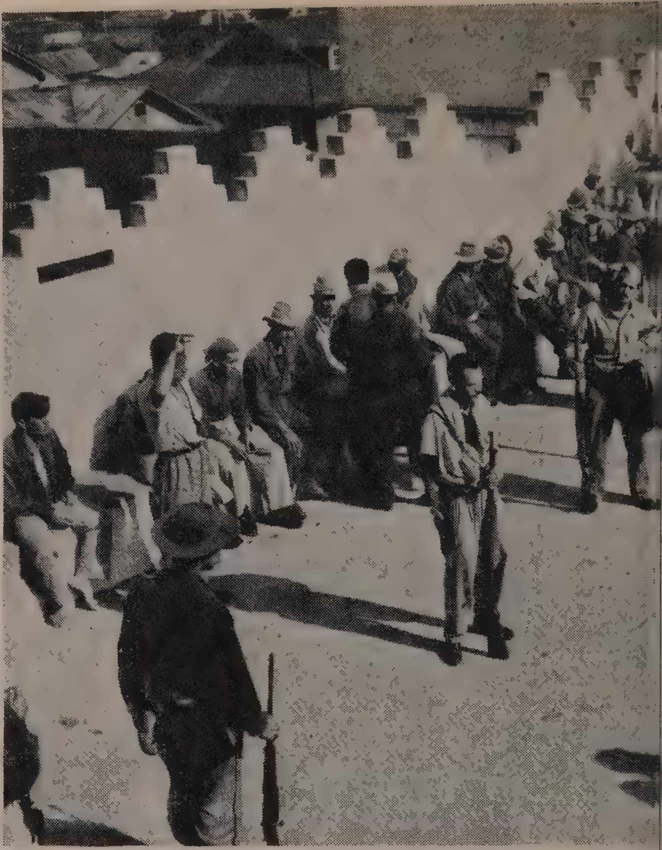
Corporation Income Tax: *see* TAXATION.
Cortisone: *see* ARTHRITIS; CHEMISTRY; CHEMOTHERAPY; CHEMURGY; ENDOCRINOLOGY; HEART AND HEART DISEASES; MEDICINE; NERVOUS SYSTEM.
Cosmic Rays: *see* PHYSICS.

Costa Rica. A Central American republic, Costa Rica is located between Nicaragua and Panamá. Area: approximately 19,238 sq.mi.; pop. (Dec. 31, 1948, official est.) 825,378, classified as about 80% white, 16% mixed, 3% Negro, less than 1% Indian. The capital is San José (pop., 1948, 90,615); other principal cities are: Alajuela (11,663), Cartago (11,505), Heredia (12,038), Liberia (4,622), Limón (11,373) and Puntarenas (10,230). Language: Spanish. Religion: predominantly Roman Catholic.

Presidents in 1949: Col. José Figueres (provisional) and Otilio Ulate Blanco.

History.—The year 1949 brought a restoration of constitutional government after a previous year of revolt and dictatorship. The constituent assembly met on Jan. 16, restored political liberties, drew up a new constitution, and retired, Nov. 8, in favour of a legislative assembly. On the same date Col. José Figueres and his revolutionary junta resigned, and President-Elect Otilio Ulate Blanco was inaugurated.

The return to democratic government was interrupted on April 2 by a military revolt fomented by the minister of national defense, Col. Edgar Cardona, but the uprising was crushed within 24 hr. Six were killed and 24 were injured in the fighting. Those arrested in connection with the revolt were granted complete amnesty in June by Col. Figueres.



COSTA RICAN ARMY REBELS captured by volunteer loyalist forces at Bel Vista fortress in April 1949 during an attempted revolt against the Figuer regime

Notwithstanding the attempted coup, the junta agreed in April to resign on May 8 and turn the government over t Ulate, but the president-elect refused to take office until th new constitution was promulgated and a legislative assembl elected. In the congressional elections, Oct. 2, Ulate's part the National Union, won a majority of the seats (33 out of 45 and also elected both of the vice-presidents. The remainin seats in the assembly were distributed among five other partie On his inauguration, Nov. 8, Pres. Ulate pledged particula support to new social-security legislation, public health, educ tion and a higher standard of living for the general public.

The critical relations between Costa Rica and Nicaragua ari ing from the so-called "invasion" of exiled former Pres. Rafa Calderón Guardia's sympathizers in Dec. 1948 were smoothe in January through the offices of the Organization of America States (*q.v.*). The dispute was settled completely in Februa by a friendship pact signed by the two countries in Washin ton, D.C.

On the economic front, rising coffee prices in the world ma ket were offset during 1949 by previous commitments to se the current crop at lower prices. The general cost-of-livin index figure rose from 240.63 in March (1936: 100) to 250. in August. In July, however, a series of government decre established new minimum wage rates affecting almost eve employee in the country and calling for wage increases fro 15% for peons in the central plateau to as much as 250% f some white-collar workers. A 10-day strike, beginning Aug. 3 in the United Fruit Co. banana plantations was settled by go ernment intervention, with the workers being awarded increase in minimum pay.

Education.—In 1948 there were 919 primary schools with 99,5 students, and 44 secondary schools with 10,955 students. The nation university had 907 students and 180 professors in 1945.

Finance.—The monetary unit is the colón, valued officially at 1 cents U.S. on July 31, 1949, but with street-market quotations as l as 11.11 cents on Oct. 22. The national budget for 1949 provided ordinary expenditures of 110,762,088 colones and extraordinary expen ures of 106,968,294 colones. Actual expenditures in 1948 amounted to 14,796,553 colones; receipts, 90,079,514 colones. At the close of 1948 he public debt was 169,136,173.96 colones, external; 147,960,742.77 colones, internal. At the end of June 1949, the central bank had gold eserves totalling 11,547,000 colones; total bank deposits were 63,128,000 olones; currency in circulation, 103,410,000 colones.

Trade and Resources.—Exports in 1948 were valued at $31,839,900 J.S., a new annual high ($24,749,472 in 1947); imports amounted o $42,344,379 ($45,000,000 in 1947). The United States took 72.04% of the exports and supplied 77.7% of the imports. The main imports vere wheat flour ($2,461,052), sulfate of soda ($1,314,806) and cotton extiles ($1,304,108). The chief exports were coffee (51,935,827 lb. at 14,189,041), bananas (419,887,360 lb. at $8,036,729), cacao (9,488,991 lb. at $3,378,925) and abacá fibre (13,809,180 lb. at $3,240,225). The 1949–50 coffee crop was forecast to reach a record 475,000 bags of 132 lb. each (302,107 bags in 1948–49). Other major crops (with 1948 production figures): corn (46,846,800 lb.), rice (28,209,480 lb.), otatoes (27,646,000 lb.) and beans (22,338,420 lb.). In 1949 there vere 492,048 head of cattle in the country.

Communications.—At the end of 1947 there were 414 mi. of public and 255 mi. of private railroads and 1,014.9 mi. of improved highways. In 1948 the public railroads carried 2,077,327 passengers and 441,635 ons of freight. At the end of 1946 there were 2,800 automobiles, 600 buses and 1,300 trucks registered.

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Cost of Living: *see* BUSINESS REVIEW; PRICES.

Cotton.

Cotton Manufacture.—The decline in the U.S. cotton industry continued through the first half of 1949, but there was appreciable improvement after midsummer. By the end of the year, the heavy inventories of the previous year had been replaced by an active demand and a rising trend of production and prices.

However, the production for the year was expected to show a minimum drop of 13% compared with 1948. On a yardage basis, 1949 production was down at least 1,200,000,000 yd. Production during the first nine months of the year was 6,197,000,000 yd., compared with 7,377,000,000 yd. in the corresponding period of 1948. Spindle activity in September was 115% of 80-hr. capacity, as compared with 103% for the first six months of the year. Some prices had advanced as much as 25% above the July low, but the average increase was nearer 10% to 15%.

The U.S. continued to hold a large share of the world's textile export market—about 25% compared with 4% prior to World War II. Widespread devaluation of currencies apparently had little immediate effect upon imports and exports of cotton cloth.

Japanese production for the low-priced type of trade increased and complaints of competition began to be heard, though Japanese production for export was apparently not more than 800,000,000 yd., or about one-third as much as prewar.

United States Production.—The raw-cotton surplus and its unsolved problems became a dominant factor in 1949. The U.S. cotton crop of 1949 of 16,034,000 bales (of 500-lb. gross weight) was the sixth largest on record, and the largest since 1937, comparable with 14,877,000 bales in 1948, and an average for 1938–47 of only 11,304,000 bales. It was valued at approximately $2,300,000,000. The estimated lint yield per harvested acre in 1949 was 285.8 lb., low compared with 312.6 lb. in 1948, but the third highest on record and comparable to the 254-lb. average during 1938–47. Acreage harvested in 1949 was 26,898,000, or 18% more than the 22,821,000 ac. harvested in 1948, and even larger in comparison with the 21,396,000-ac. average of the previous decade. This large acreage was in spite of a government request that an acreage goal of 21,894,000 ac. be observed. Texas, California, Arizona and New Mexico produced 50% of the 1949 crop. Dry November weather was favourable for harvesting the late crop. Fertilizers were more abundant and their use in larger amounts accounted in part for the high yields. The 1949 crop of American-Egyptian cotton was 4,300 bales, whereas only 3,600 bales were produced in 1948, but the average for 1938–47 was 29,500 bales.

Cotton prices during much of the year were rather stable near the loan level. Prices to growers reached a peak of 30.13 cents per lb. in June, before the condition and probable size of the 1949 crop were adequately indicated, but declined to 27.76 cents per lb. in November. The probable average price for the 1949 crop was indicated at 28.60 cents per lb., compared with 30.41 cents average for the 1948 crop.

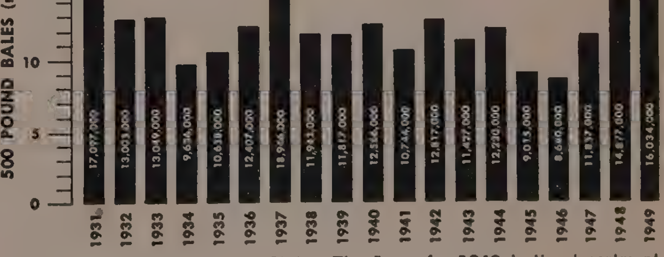
The average government loan rate on 1949 seven-eighth inch upland cotton to producers was 27.23 cents per lb.; the 1948 rate was 30.74 cents per lb. Some 5,270,000 bales of the 1948 crop were placed under government price support; it was estimated that a larger part of the 1949 crop would eventually move into the support program.

Exports of cotton from the U.S. during 1949–50 were expected to decrease moderately from the 4,747,600 bales in 1948–49, but to continue below the prewar rate. A large portion of the exports from the 1949 crop would go to countries of the Economic Cooperation administration (ECA) program (60% of the raw cotton exports in 1948–49) and to areas of military occupation.

In summary, the 1949 crop of 16,034,000 bales, plus a carry-over of 5,283,000 bales, provided a total U.S. supply of 21,317,000 bales against a probable domestic consumption of 8,000,000 bales and an export of perhaps 4,500,000 bales, thus leaving a probable carry-over as of Aug. 1950 in excess of 8,500,000 bales, much of it in the hands of the Commodity Credit corporation (CCC). This mounting surplus resulted in an order from the department of agriculture that plantings in 1950 be allocated to producing areas on the basis of a national goal of 21,000,000 ac.—21% less than in 1949. Growers in December approved by a 9 to 1 ratio that marketing quotas be established on the 1950 crop, hence loans would continue to be available to co-operating growers at 90% of parity.

World Cotton Production.—World cotton production continued its upward trend in 1949. The preliminary estimate for the crop for 1949–50 indicated 30,400,000 bales, an increase of 4.5% compared with the 29,100,000 bales of the previous year, but below the 21,676,000 bales of 1935–39. Acreage increased sharply to 68,640,000 from 63,840,000 in 1948, but was substantially below the 81,142,000 ac. of prewar. Mexico harvested 1,334,000 ac. against 1,050,000 ac. in 1948, producing a record crop of 896,000 bales, or more than double the 1940–44 average. India increased production to 2,400,000 bales from 1,960,000 bales the previous year. Egypt reported a crop of 1,616,000 bales, a 12% smaller crop from an acreage 17% larger than in 1948, a result of a 25% reduction in yields following insect damage. Brazil's crop was expected to be less than the 1,500,000 bales of the previous year.

World total cotton carry-over from previous crops increased to 14,768,000 bales, from 13,907,000 bales in 1948, but was low compared with the 1935–39 average of 17,352,000 bales. The carry-over was expected to increase to about 17,000,000 bales



COTTON CROP in the United States. The figure for 1949 is the department of agriculture's estimate by crop year end, Aug. 1950. Total world consumption was expected to decline about 600,000 bales, with the decrease largely in China; Japan, Germany, France and the United Kingdom were expected to show increases and demands from importing countries would be not much below 1948–49.

Cottonseed.—Cottonseed, a highly valuable derivative of fibre production, part of which is used as an edible oil base for margarine, was estimated preliminarily at 6,477,000 tons, compared with 5,945,000 tons in 1948 and a ten-year average of 4,631,000 tons. The government improvised a support price program of $49.50 per ton (90% of parity) on safely stored seed of low moisture content. The price of cottonseed to the producer varied widely during 1949, ranging from $67.70 per ton in January to a low of $37.50 in July, although by the year end there was moderate recovery. A world crop of 14,000,000 short tons was forecast, a 5% increase over 1948. The average price for the crop was estimated at $42.80 per ton; that for 1948 was $67.20 per ton. (*See* also LINEN AND FLAX; RAYON AND OTHER SYNTHETIC FIBRES; TEXTILE INDUSTRY; WOOL.)

U.S. Cotton Production by States
(In thousands of 500-lb. bales)

State	1949	1948	Average 1938-47
Texas	5,900	3,153	2,722
Arkansas	1,660	1,982	1,329
Mississippi	1,490	2,353	1,588
California	1,300	968	447
Alabama	865	1,197	901
Louisiana	650	756	528
Tennessee	650	669	523
Oklahoma	620	374	521
Georgia	610	751	779
South Carolina	560	871	716
Arizona	500	328	174
North Carolina	460	678	549
Missouri	460	506	356
New Mexico	255	236	119
Virginia	20	24	22
Florida	18	15	14
Other States	16	16	16

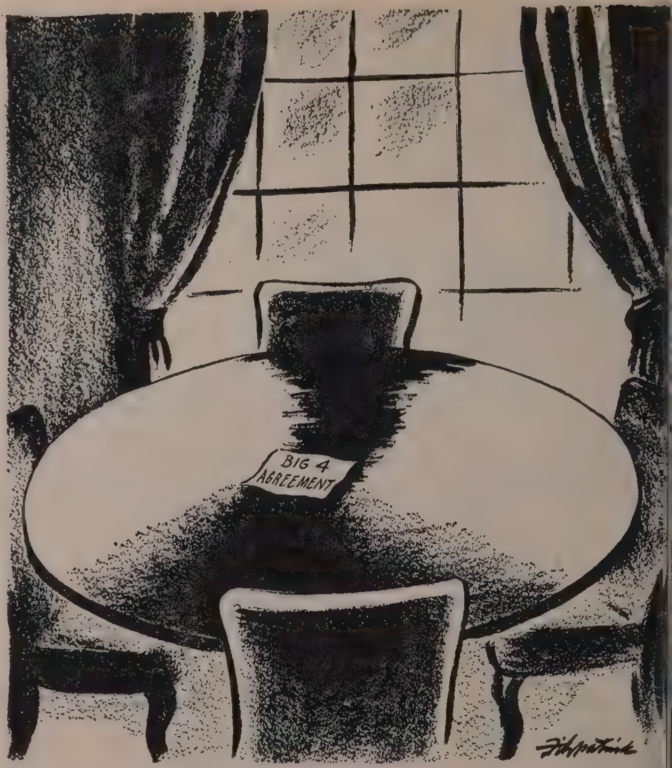
FILMS OF 1949.—*Cotton Series* (two films) (Paul Hoefler Productions). (J. K. R.)

Cottonseed Oil: *see* VEGETABLE OILS AND ANIMAL FATS.
Council of Europe: *see* EUROPEAN UNION.

Council of Foreign Ministers. The sixth session of the Council of Foreign Ministers—the first to be held since the fifth session had adjourned *sine die* at London on Dec. 15, 1947—met at Paris from May 23 to June 20, 1949, to consider the basic problems of allied policy toward Germany and Austria. The session left the four governments as far apart as before on the question of Germany, but recorded substantial progress toward agreement on re-establishing Austria as a free and independent state.

The holding of the session was arranged as one part of a four-power agreement, reached on May 4, for the lifting of the soviet blockade of the western sectors of Berlin (*q.v.*) and for the removal of allied countermeasures against trade with eastern Germany. The blockade of western Berlin had been strongly countered by the United States and British air lift, as well as by determined resistance on the part of the people of Berlin. Between Feb. 15 and May 4 the United States government, with the approval of the British and French governments, had negotiated with the soviet government, through ambassadors Philip Jessup and Jacob Malik, in the search for a way out of this dangerous impasse.

First official information concerning the negotiations came from the soviet Tass News agency on April 26, followed by a fuller state department release of the same day. The soviet decision to abandon the blockade in return for a revival of negotiations on Germany marked a serious relaxation of international tension, for the soviet government thereby acknowledged the right, denied in the negotiations of 1948, of the Allies t occupy Berlin and gave up its claim that all Berlin constitute part of the soviet zone of occupation.



"NOT MUCH, BUT SOMETHING," editorial comment by Fitzpatrick of th *St. Louis Post-Dispatch,* on the sixth session of the Council of Foreig Ministers which ended in Paris June 20, 1949, with limited accord on th question of an Austrian peace treaty

From May 23 to 31 the four foreign secretaries, Dean G Acheson, Ernest Bevin, Robert Schuman and Andrei Y. Vishinsky, debated the problem of German unity and allied contro Vishinsky urged the reinstatement of the four-power Allie Control council, together with the formation of a German stat council, based upon the economic organs already functioning i eastern and western Germany respectively. He again argued fo separate four-power control of the Ruhr with direct soviet participation, and for large-scale German deliveries of reparation to the Soviet Union. He refused all requests for informatio concerning the economic condition of the soviet zone, includin the status of soviet-owned industries, which were estimated t constitute about one-third of the industrial assets of that zon

Vishinsky's proposals were met by a western proposal o May 28 for extending to all of Germany the fundamental law drafted for the west German state, through holding free election in the soviet zone and through guaranteeing personal and political freedoms there. The four allies could then enact a ne occupation statute, regulating their relations with the unifie German state and reserving only limited powers to themselve with most decisions of the allied commission being taken henceforth by majority rather than unanimous vote. Germany woul make no reparations deliveries from current production stocks and Germany would recover ownership of all industri enterprises taken over by a foreign power since the surrende of May 8, 1945. These proposals were rejected by the sovie government, and the three western representatives also decline the soviet proposal that the council receive a delegation of th soviet-dominated people's congress.

From June 1 to 10 the foreign ministers discussed the problem of restoring a unified administration and currency in Berlin. Again the western members proposed that broad powers b granted to the municipal administration, based on free election vith its decisions subject to disapproval by the four-power ommandatura, normally by unanimous vote. Three secret meetngs failed to reconcile the widely divergent viewpoints, since he soviet counterproposals would have subjected the Berlin adninistration closely to the allied kommandatura, which, in urn, would be able to act only through unanimous decisions. fter extensive discussion of the economic problems of Berlin nd its relations to the soviet zone and of relations between the oviet and western zones, the foreign ministers were unable to each any definite agreements and merely instructed their auhorities in Berlin to consult concerning the expansion of trade nd other questions of common interest in Berlin. The council eaffirmed the May 4 agreement which removed the soviet blockde of Berlin.

The discussion of how and when to draft a peace treaty for ermany was also fruitless. The soviet proposals that the four overnments prepare a draft treaty within three months and hat all occupation forces be withdrawn from Germany one ear after conclusion of the treaty seemed designed to win suport in Germany. The western negotiators objected that there vas little point in promising to prepare a treaty unless the four overnments agreed first to re-establish the political and ecoomic unity of Germany, to determine its boundaries and to lecide the questions of reparations and the future status of oviet-owned properties. The final communiqué, June 20, reorded the failure of the foreign ministers to find any common neeting ground for the restoration of joint control over Gernany as a whole, or for the economic and political unity of ermany. Despite the statement that the ministers would, durng the next session of the general assembly of the United Naions, "exchange views regarding the date and other arrangenents for the next session" of the council to deal with the Gernan question, no such arrangements were made during the inormal meetings of the four ministers at New York in late eptember and early October.

The Paris session succeeded, however, in removing several of he main obstacles which had blocked for many months the ompletion of a four-power treaty re-establishing Austria as a ree and independent state, as promised in the Moscow declaraion of Nov. 1, 1943. Negotiations, begun at London in Jan. 947, transferred to Moscow, then to Vienna and back to London, and broken off in May 1948, had been resumed by the forign ministers' deputies at London, on Feb. 9, 1949, but were till deadlocked in May by continuing disputes over Yugoslav laims to Austrian territory and to reparations, as well as over oviet claims to German assets in eastern Austria.

In the last days of the Paris session the soviet government bandoned the Yugoslav claims; it had previously upheld them, lespite the increasingly bitter controversy between the soviet nd Yugoslav Communist parties, beginning in June 1948. In he final communiqué of June 20 the four ministers announced heir agreement to re-establish Austria within its pre-Anschluss oundaries, with cultural and administrative protection for the lovene and Croat minorities. Vishinsky also abandoned the ugoslav claim for $150,000,000 in reparations from Austria, vhile agreeing that Yugoslavia should retain or liquidate Ausrian properties within its own territory.

In return for these important concessions the western powers nade several concessions to soviet economic interests. Of the erman "assets" which had been assigned to soviet ownership y the Potsdam protocol, certain important items, especially in he fields of oil and Danubian shipping, were now to be assigned o the Soviet Union, and, in return for its renunciation of all ther claims to German assets, Austria was obligated to pay 150,000,000 over a six-year period. Details of the settlement vere referred to the deputies, who were instructed to complete the draft treaty by Sept. 1.

After the agreed protocol had already been issued to the press, Vishinsky attempted to recall it, in order to insert into the agreed statement a provision assuring the free export of profits of the soviet enterprises in Austria; this matter was finally left to later settlement. The Yugoslav government denounced the Paris settlement declaring that it would never abandon its claims against Austria and attacking the four governments for again sanctioning the injustice of "the imperialist peace of Versailles."

The final negotiations for the Austrian treaty were not completed by Sept. 1, and the deputies were directed to resume their work on Sept. 22 at New York, where the general assembly of the United Nations was in session. The foreign ministers also met informally, on Sept. 26 and 29 and again on Oct. 6, to settle some of the disputed points. On Dec. 14, after 246 meetings, the deputies suspended their negotiations, to resume them in London on Jan. 9, 1950. It was widely believed that soviet reluctance to complete the final drafting of the treaty was because of the hostile pressure which it was exerting upon Yugoslavia; as long as soviet troops occupied eastern Austria the soviet government had the right to maintain lines-of-communications troops in Hungary and Rumania, from whose territory the chief centres of Yugoslavia could be threatened.

During their New York sessions the deputies completed many of the unresolved provisions of the treaty. They elaborated detailed arrangements for the protection of the cultural and educational rights of the Slovene and Croat minorities in Austria and the use of their languages regionally for administrative purposes. They rejected, however, the Yugoslav demand of full political autonomy for the Slav minority in Austria.

Original soviet demands for full ownership of German "assets" in eastern Austria would have left the Austrian economy bound hand-and-foot. Over many months of relentless bargaining the extent of soviet claims had been considerably reduced, and the soviet negotiators had also abandoned the demand of extraterritorial status for their enterprises. In the spring of 1949 the deputies agreed to assign to the Soviet Union oil-refining equipment with a capacity of 420,000 tons of crude oil, and to transfer to its possession certain physical assets of the Danubian steamship company located in eastern Austria, as well as in Hungary, Rumania and Bulgaria; by giving up its long-maintained claim to share in the control of the Austrian steamship company the new soviet position left Austria free to develop its own navigation facilities independently.

At their Paris session the foreign ministers agreed that Austria should be denied the right to nationalize the soviet enterprises except with soviet consent. The Paris bargain also assigned to soviet control 60% of Austria's oil-producing areas, at the 1947 level, under 25-year concessions. In addition, the deputies were directed to elaborate a list of oil-exploration regions, exactly specified, in which the soviet government would be free, during 8 years, to conduct explorations and to receive further 25-year concessions for those areas which proved oil. Untapped areas would revert to Austrian control in eight years.

When the negotiations were suspended, in December, the main disagreements concerned the method of settling disputes over the interpretation of the treaty; the support of displaced persons located in Austria; and the employment by Austria of foreign technicians. None of these questions had sufficient intrinsic importance to prevent conclusion of the treaty if the four powers could agree, politically, to recognize Austria's independence and to withdraw their forces of occupation. (*See* also AUSTRIA.) (P. E. M.)

Counterfeiting: *see* SECRET SERVICE, U.S.

Countries of the World, Areas and Populations of the: *see* AREAS AND POPULATIONS OF THE COUNTRIES OF THE WORLD.

Courts: *see* LAW.

Cranberries: *see* FRUIT.

Credit, Consumer: *see* CONSUMER CREDIT.

Cricket.

The winter of 1948–49 saw two overseas cricket tours. A Marylebone Cricket club side visited South Africa and a West Indies team went to the Indian peninsula. The M.C.C. team, captained by F. G. Mann, was unbeaten throughout its program and won the only two finished games out of the five four-day tests that were played.

The West Indies team lost only one of its 19 matches in India, against six wins, including the only test match that was finished. In one of the drawn games Pakistan put up an impressive performance.

In the domestic season in Australia, New South Wales won the Sheffield Shield competition and Sir Donald Bradman celebrated his knighthood by scoring yet another century in his testimonial match. A team of English women cricketers, captained by Molly Hide, had a successful tour of Australia and New Zealand, losing only one of their 28 fixtures but that one the only finished test match in Australia. Miss Hide made over 1,000 runs and five centuries.

The English season of 1949 recalled in its continual sunshine and hard wickets the years 1911 and 1921. Chief interest centred in the visit of a New Zealand team, the first to visit England for 12 years. Captained by W. A. Hadlee and managed by J. H. Phillips, the tourists suffered only a single defeat—at the hands of Oxford university—and held England to a draw in all four test matches.

The county championship of 1949 provided the most open and prolonged struggle within living memory. At the beginning of August five counties had some chance of finishing on top. In a desperate match with Derbyshire at Lord's a wonderful innings by D. Compton, when all seemed lost, carried Middlesex into security, but Yorkshire, playing with something of the ruthless *élan* of the county's great days, came with a rush at the finish to tie for first place. L. Hutton, with an aggregate of 3,429, only surpassed three times in cricket history, was supported by an impressive reinforcement of young players of whom Brian Close's record of 1,000 runs and 100 wickets in the first full season rivalled that of J. N. Crawford in 1906.

There was a fine Gentlemen *v.* Players match in which runs were always hard to come by; at one time the Players, set 139 to win, had lost 6 wickets for 60, but spirited batting by T. Evans and R. Jenkins won the day. The university match provided the surprise of the season. Oxford had had a notable record at home, defeating both the New Zealanders and Yorkshire, but Cambridge, well led by D. J. Insole and with two fine batsmen in G. H. G. Doggart and J. G. Dewes, consolidated notably on their tour and at Lord's outplayed Oxford to win by seven wickets. Statistically, the outstanding feature of the university season was the partnership of 429 by Doggart and Dewes against Essex, a record for the second wicket in English cricket. Eton, a strong side, was too good for Harrow, and there were some signs of a general revival in school cricket. For the first time representative sides picked from the grammar and secondary schools of England and Wales met in an international match. Lancashire second XI won the minor counties' championship.

(H. S. A.)

Crime.

United States.—Most urban crimes rose in volume in 1949, thus reversing the downward tendencies noted in 1948. But the rise in rural robberies cancelled out the decline recorded in the preceding year, while rural burglaries and larcenies added a further crest to the rising tide of these crimes. Auto thefts in both city and country continued their decline, thus probably reflecting the gradual satisfaction of the extraordinary demand for cars that developed in the midst of wartime shortages. Homicides further extended the decline recorded in 1948.

CITIZENS OF GARY, Ind. at the Gary city hall in March 1949, demanding that city and county officials provide stronger protection against crime. Indignation was arouseu by the murder of a Gary high school teacher a week earlier

Table I.—*Crime in 1948 and 1949 in U.S. Cities and Rural Areas—January to June, 1948 and 1949*

Offense classification	Per Cent Change in 1949 Cities	Rural Areas
Murder and nonnegligent manslaughter	− 6.6	− 7.1
Negligent manslaughter	−15.5	− 4.9
Rape	+ 1.3	0.0
Robbery	+ 0.5	+ 8.0
Aggravated assault	+ 4.1	+ 3.8
Burglary	+ 4.4	+13.1
Larceny	+ 3.3	+ 8.8
Auto theft	− 3.7	− 5.8
Total	+ 2.7	+7.6

Table I presents a large sampling of the crime totals, since it includes crimes committed in 2,081 cities and towns having a total population of 58,000,000 plus rural areas comprising 39,000,000 inhabitants.

Based upon these figures, the total number of offenses of the types listed in Table I, committed in the United States during 1948 was estimated at 1,686,670. Reduced to daily averages, 36 persons were slain feloniously, 255 were victims of rape or assault with a deadly weapon and 150 persons were robbed by the use of personal force or putting in fear. In the average

Table II.—*Urban and Rural Crimes per 100,000 Population, 1948*

Offense classification	Urban	Rural
Murder and nonnegligent manslaughter	5.99	6.15
Negligent manslaughter	3.96	4.26
Rape	12.3	12.23
Robbery	56.2	18.4
Aggravated assault	75.8	36.5
Burglary	392.2	149.8
Larceny	975.2	220.3
Auto theft	165.5	54.0

Table III.—*Range in Crime Rates per 100,000 Population Among Cities of Various Geographic Divisions; January–June 1949*

Offense classification	Highest Rate		Lowest Rate	
Murder and nonnegligent manslaughter	East south central	7.64	New England	0.39
Robbery	Pacific	63.2	New England	9.2
Aggravated assault	South Atlantic	118.5	New England	5.7
Burglary	Pacific	363.9	Middle Atlantic	117.2
Larceny	Pacific	1,017.1	Middle Atlantic	230.5
Auto theft	Pacific	153.7	Middle Atlantic	50.4

day also, there were 1,032 burglaries, 463 automobile thefts and 2,672 miscellaneous larcenies. Comparisons of the relative frequency of the various reportable offenses appear in Table II.

The narrow spread between urban and rural rates for murder, manslaughter and rape, together with the wide disparity in crimes involving property, is a persistent characteristic of crime in the United States.

The proceeds of larcenies increased slightly in 1948, but declined for robbery and for burglary. Average value of stolen property was $202 in robberies, $127 in burglaries, $64 in general larcenies and $869 in auto thefts. In a group of 337 cities having a total population of 37,000,000, the value of stolen property totalled $112,093,594, almost 60% of which was recovered by police. Geographic distribution of crime continued to be highly unequal among the various regions, partly because of the irregular distribution of great cities with their high crime rates, and in part because of regional differences in the character and derivation of the general population. Murder and assault continued to show the highest rates in the southeastern quarter of the United States, with the northeast consistently showing lowest rates for all reportable offenses.

Viewed over the course of 10 years, all but two categories of urban crimes were higher in 1949 than they were during the prewar period 1938–41. (*See* also FEDERAL BUREAU OF INVESTIGATION; JUVENILE DELINQUENCY; LAW; POLICE; SECRET SERVICE, U.S.)

BIBLIOGRAPHY.—Committee on Uniform Crime Records. *Uniform Crime Reporting; a Complete Manual for Police,* International Association of Chiefs of Police (1949); Federal Bureau of Investigation, *Uniform Crime Reports* (semiannual bulletins) for 1948 and first half of 1949); U.S. Bureau of the Census, *Judicial Criminal Statistics* (1945) and *Prisoners in State and Federal Prisons and Reformatories* (1947). (BR. S.)

Great Britain.—In 1948 the total of persons in Great Britain found guilty of offenses other than against defense regulations was 656,950, of whom 129,384 had committed indictable offenses and 527,566 nonindictable offenses, a rise of 11.9% compared with 1947 for indictable and of 5.8% for nonindictable offenses. In addition, 20,163 persons were found guilty of offenses against defense regulations, against 18,863 in 1947. Of these, 89% had committed black market, especially rationing, offenses, compared with 83% in 1947. About half the total of persons found guilty had committed traffic offenses viz., 49.6% against 52.8% in 1947. The number of those guilty of larcenies remained fairly constant at slightly over 12% and that of sex offenders at 0.6%. Excluding certain categories of indictable offenses which are considered separately, the highest increase, *i.e.*, 27%, was found among offenders guilty of violence against the person. The highest increases in nonindictable offenses referred to drunkenness (31,260 as against 23,762) and prostitution (5,647 against 5,041). The figures quoted, however, referred to court appearances only and did not necessarily mean as many different individuals.

Indictable offenses known to the police increased from 498,576 in 1947 to 522,684, as against 283,220 in 1938. Of them, 216,942 were cleared up during the year. Of 147 cases of murder of persons aged one year and over, 130 were cleared up during the year and 109 persons were charged. In 34 cases the murderer or suspect committed suicide; in 43 cases he was found insane.

In Scotland the total of persons convicted or found guilty in 1948 was 89,459, which was 1,335 more than in 1947. The total number of crimes and offenses known to the police was 172,129, or 2.6% more than in the previous year.

Europe.—Reliable and comprehensive statistical information was unobtainable for most eastern European countries and for Germany, where criminal statistics were still not reorganized after World War II. However, figures available for a few western and northern European countries indicated certain trends.

Belgium.—The prison population declined from 21,891 in 1947 to 15,746 in 1948.

The Netherlands.—Crimes known to the police numbered 49,061 in the second half of 1948 and 41,853 in the first half of 1949. Of this total, slightly more than 70% were crimes against property, whereas sexual offenses numbered about 7% and offenses against the person about 13%. The number of prison inmates present in the course of the year increased from 37,330 ordinary and 10,390 political prisoners in 1946 to 43,754 ordinary and 18,479 political prisoners in 1948, the increase in the latter category being due to technical factors related to the administration of criminal justice rather than to an actual rise in political crime.

Scandinavian Countries.—In Sweden, the total of crimes per 100,000 of the population was 341.4 in 1947 against 349.6 in 1946 and 225.5 in 1940. In Norway, the absolute figures were 5,731, or 186 per 100,000, for 1946 (published in 1948), against 4,698, or 154 per 100,000 in 1945; about three-quarters of them were crimes against property. (*See* also POLICE; PRISONS.)

BIBLIOGRAPHY.—*Criminal Statistics England and Wales* (1948); *Annual Report of the Commissioners of Prisons* (1948); *Criminal Statistics Scotland* (1948); *Report on Prisons in Scotland* (1939–48); *Bulletin de L'Administration des Prisons* (Belgium, Feb. 1949); *Statistiska Centralbyran, ser. A, vol. VI; Norges Officielle Statistikk X, 1945–46* (Sweden, 1948). (H. MM.)

Cripps, Sir (Richard) Stafford (1889–), British chancellor of the exchequer, was born on April 24. He was educated at Winchester and University college, London, and was admitted to the bar in 1913. He was knighted and appointed solicitor general in the Labour government in 1930, and in 1931 was elected Labour member for East Bristol. On Jan. 25, 1939, Sir Stafford was expelled from the Labour party for attempting to create a popular front. In June 1940 Winston Churchill appointed him ambassador to Moscow, where he completed the Anglo-soviet pact. He returned to London in Feb. 1942 to become lord privy seal, and in March left for India to work out terms for independence. On Feb. 28, 1945, he was readmitted to the Labour party. In the Labour government he was president of the board of trade, July 1945 to Sept. 1947, and minister for economic affairs, Sept. 29 to Nov. 13, when he became chancellor of the exchequer though retaining general responsibility for economic affairs.

On April 6, 1949, he presented his budget to the house of commons and because of the continued rapid drain on Britain's dollar reserves he presided over a meeting of the commonwealth finance ministers in London in July. This was preceded by talks with John Snyder, United States, and Douglas Abbott, Canada. In September Sir Stafford visited Washington, D.C., for further financial talks between the three countries. He returned to Great Britain on Sept. 17 and the following evening announced in a broadcast that the government had decided to devalue the pound. He visited Brussels and Paris many times during the year for meetings of the Organization for European Economic Cooperation and of the finance ministers of the Brussels treaty powers.

Crude Oil: *see* PETROLEUM.

Cuba. The republic of Cuba occupies a large island lying between 20° and 25° N. lat. and 74° and 85° W. long., of 44,217 sq.mi., including Isle of Pines and smaller islands. The population (est. Dec. 1949) was 5,295,000, approximately half of European and half wholly or partly of non-European origin. Greater Havana had a population in excess of 800,000 (1949); other important cities (est. 1946) Santiago de Cuba, 152,000; Camagüey, 87,000; Pinar del Río, 64,000; Matanzas, 55,000; Santa Clara, 54,000; Cienfuegos, 53,000. President in 1949: Carlos Prío Socarrás.

History.—The development of Cuban affairs during 1949 was uneventful. Public discussion was chiefly focused upon economic and financial affairs. The outlook for the marketing of sugar was clouded early in the year, but gradually the entire surplus was disposed of, and the year ended with a prospect of marketing the larger crop which favourable weather was foreshadowing for the season 1949–50. The death, just before Christmas, of Sen. José M. Casanova, long the recognized spokesman for the sugar industry, and an outstanding industrialist, was an unfavourable factor, as he for some years had been the chief negotiator on behalf of Cuba in foreign sugar-quota discussions, as well as the successful conciliator of the conflicting interests of field labour, contract farmers and sugar refiners.

During 1949, the volume of imports declined (by volume), but less than 10%; bank clearings were down slightly more than seasonally through the year and both price and wage levels rose. Some industrial expansion, however, took place; and there were indications of renewed mining activities. The search for oil, sporadically promoted in former years, became more intense and important. The construction of an oil refinery was carried forward. Some steps were taken toward the rehabilitation of railroad rolling stock and roadbed. The availability of construction materials from the United States spurred the construction of new housing (chiefly multiple) in the capital and provincial cities.

There was a perceptible increase in apprehension over the stability of various trust funds established to support industrial pensions and the government disability system, during the later months of 1949. Apparently the cumulative effect of some years of injudicious management gave rise to exaggerated fears. On Oct. 11 the president announced a comprehensive financial program, seeking congressional authorization to contract a long-term loan for as much as 200,000,000 pesos (the peso is kept on a parity with the U.S. dollar). This borrowing would involve refunding only in insignificant measure, as initially projected, and would envisage a program of extensive public works of new highways, new housing for urban and agricultural workers, port improvements, aqueducts and irrigation and an intensive cultivation of the tourist business. The debates brought little to light as to the practical aspects of the program; on Nov. 17 the borrowing was authorized. Discussions with financial groups in the United States began before the end of the year.

Substantial progress was made toward a treaty with the United States, for the elimination of the double taxation of income, in technical conversations between respective officials.

The closing months of 1949 were overshadowed by serious difficulties with the Dominican Republic. The government of the latter alleged that Havana was the centre of conspiracies to organize expeditions to overthrow the Dominican regime. The Cuban congress met in special session at the end of December to confer emergency powers upon the executive in the event of attack. The Organization of American States was officially requested to investigate the charges. (C. Me.)

Education.—In the school year 1944–45 there were 498,286 children in attendance at public schools and 72,000 at private schools. There were 21 institutes for advanced education and a normal school and a commercial school in each province. University education was available at the University of Havana.

Finance.—The monetary unit is the peso, officially pegged at par with the U.S. dollar. The executive budget for the fiscal year 1950 (July 1, 1949-June 30, 1950) estimated ordinary government revenue at $97,704,519 and ordinary expenditure at $97,543,800. The extraordinary budget was balanced at $134,517,412. As of June 30, 1949, the national debt was $107,305,000, of which $75,287,700 was foreign and $32,017,300 was domestic. Notes in circulation (including U.S. currency) on June 30, 1949, totalled $644,100,000; the gold reserve was $301,000,000. The composite statement of the 15 principal banks on Dec. 31, 1948, showed assets of $628,820,461; total deposits amounted to $558,470,981.

Trade and Communications.—Exports in the year 1948 amounted to $709,872,461; imports were $527,799,365. The chief exports were sugar (82%), molasses (5%) and tobacco (4%), and the chief imports included rice, butter and flour. The U.S. supplied 79.7% of the total imports and absorbed 51.6% of the exports.

Cuba in 1949 had 3,017 mi. of main-line public railroad and about 660 mi. of sidings and yards. In addition, there was a total of 7,870 mi. of industrial trackage, almost all of which was operated by the sugar companies. Roads in existence on Jan. 1, 1949, included 1,720 mi. of paved highways and 600 mi. of improved highways. As of Dec. 31, 1948, there were in operation 40,878 passenger cars, 2,795 motorcycles, 24,634 trucks, 320 truck-trailers and 4,118 buses. There were two domestic aviation companies—Compania Cubana de Aviacion and Aerovias "Q," both of which had international routes. In addition, international service was supplied by Pan American World Airways, Braniff Airways, Chicago and Southern Air Lines, K.L.M., Linea Aeropostal Venezolana and National Airlines. According to Lloyd's Register of Shipping, the merchant marine had 34 steamers and motorships (more than 100 gross tons) aggregating 34,684 gross tons on June 30, 1948.

On Dec. 31, 1948, there were 93,426 connected telephones. About 100 long- and short-wave broadcasting stations were in operation.

Agriculture.—Cuba is primarily an agricultural nation, and sugar cane is by far the leading crop. Agricultural production in 1948 included raw sugar equivalent to 6,675,000 short tons; blackstrap molasses 340,800,000 gal.; leaf tobacco 28,000 short tons; coffee 36,440 short tons; henequen fibre 14,400 short tons; pineapples 186,000 short tons; and rice (milled) 44,000 short tons.

Cattle and dairying are of increasing importance. The livestock census of July 1, 1946, showed 4,136,000 cattle, 1,338,000 pigs, 154,000 sheep and 141,000 goats. The value of forest products was estimated at $4,500,000 in 1948 and that of fisheries at $2,000,000.

Manufactures.—The manufacture of sugar from sugar cane is the principal industry. There are 160-odd sugar mills scattered throughout the island. Other industrial production in 1948 included cigars 620,000,000; cigarettes 7,691,000,000; cement 1,676,200 barrels; and cotton piece goods 38,868,000 yd. A wide range of other consumers' goods is produced. The cost-of-living index stood at 237 in Aug. 1949 (July-Dec. 1937=100).

Mineral Production.—Refractory chromite is the most important mineral in volume of output; 109,612 long tons were produced in 1948. Other minerals include copper, gold, iron ore and zinc.

Curaçao: *see* Netherlands Antilles.

Curling. Canadian skips outscored their U.S. rivals, 343 to 312, in 29 matches at Montreal, Que., to return the Gordon medal, symbol of international supremacy, to Canada after a one-year stay south of the border. The Schenectady (N.Y.) club won the Gordon Champion Rink medal.

U.S. curlers broke a Canadian monopoly on the International bonspiel's top prize when J. J. Ahern's St. Paul (Minn.) rink, skipped by Bob Dunbar, defeated W. B. White's rink of Oshawa, Ont., 12 to 11, at Detroit, Mich.

Other major winners in 1949 included Hamilton (Ont.) Thistle club, Douglas medal; Granite (Toronto, Ont.) Curling club, Mitchell Gold medal; Ardsley (N.Y.) C. C., Mohawk trophy; St. George (Montreal) C. C., Royal Caledonian trophy; St. Andrews (N.Y.) Golf club, Utica cup; Ottawa C. C., St. Lawrence cup; and the Country club of Brookline, Mass., Stockton cup. (T. V. H.)

Currency: *see* Coinage; Exchange Control and Exchange Rates. *See* also under various countries.

Cycling. Fausto Coppi, Italian star, captured the 25-day Tour de France, blue-ribbon classic of cycling, finishing with an elapsed time of 149 hr. 40 min. 49 sec. Coppi also took the pursuit title in world professional racing, other victors being R. H. Harris of Great Britain, sprint; Henri Van Steenbergen, Belgium, road, and E. Frosio of Italy, motor-paced. Amateur title winners were Sid Patterson of Australia, sprint; K. E. Anderson of Denmark, pursuit, and H. J. Faanhof

CYCLING CONTESTANTS on a boulevard of Paris at the start of the 1949 Tour de France; the race was won by an Italian, Fausto Coppi

of the Netherlands, road. Patterson defeated Jacques Bellenger of France and Jack Heid of the United States in defense of his crown at Copenhagen, Denmark.

Jim Lauf of Hydes, Md., was champion of the United States amateurs and made a sweep of the one-, five- and ten-mile point races at New Brunswick, N.J., to capture the eastern states dirt-track honours. Donald Clausen of Kenosha, Wis., retained the men's junior crown and Doris Travani of Detroit, Mich., kept the women's title.

Tom Montiage of Buffalo, N.Y., annexed the Jack Busch Memorial race which drew a field of 60 U.S. and Canadian stars to Buffalo in June. The season saw the comeback of six-day racing in New York, with two events held at the Twenty-Second Engineers armoury. A Swiss team of Walter Diggelman and Hugo Koblet triumphed in the March grind, and Alfred Strom and Reggie Arnold of Australia placed first in a November contest. (T. V. H.)

C.Y.O.: *see* SOCIETIES AND ASSOCIATIONS: *Catholic Organizations for Youth.*

Cyprus.

A British colony and island in the eastern Mediterranean, Cyprus lies south of Turkey and west of Syria and Lebanon. Area: 3,572 sq.mi.; pop. (1946 census): 450,114, (1948 est.): 460,000. Chief towns: Nicosia (cap., 34,463); Larnaca (14,746); Limassol (22,693); Famagusta (15,912). Languages: Greek 80%, Turkish 20%; English also is spoken by about 10%. Religions: Greek Orthodox 80%, Moslem 20%. Governor in 1949: Sir Andrew Wright.

History.—A report published during 1949 on the progress of the ten-year development plan showed an expenditure of £1,178,036 on various projects in the two years and nine months since its inception; irrigation, at a cost of £313,915, was the largest single item. Formal announcement of the success of the anti-malarial campaign was made on April 4, when it was claimed the island had been cleared of the malarial mosquito at a cost of £220,000.

Municipal elections were held during May and resulted in slight gains for the right-wing parties, which gained control of three main towns and seven rural centres or municipalities. But political agitation continued for *enosis,* or union with Greece, supported equally by both right- and left-wing parties of the Greek-speaking community.

The island's economic position, with a very large adverse trade balance, gave rise to serious concern, and the government took various steps to secure new markets abroad and to aid threatened industries.

The interim report of the committee on Turkish affairs which had been carrying out an investigation into matters concerning the Turkish community in Cyprus was published. It was an all-Turkish committee and, bearing in mind that it dealt with an all-Moslem community, it recommended certain far-reaching reforms including the abolition of polygamy, the discontinuance of the dowry system, restricted divorce subject to a judicial decision and reconstitution of the Sheri courts under a modern name and modern laws.

Finance and Trade.—Currency: the Cyprus pound, at par with sterling and divided into 180 piastres. Budget (1948): revenue £5,915,985; expenditure £5,812,952. Foreign trade (1948): imports £15,422,091; exports £5,678,617. Principal exports are minerals (cuprous concentrates, iron pyrites and asbestos) and agricultural products. (Jo. A. Hn.)

Cyrenaica: *see* ITALIAN COLONIAL EMPIRE.

Czechoslovakia.

A people's republic of central Europe, Czechoslovakia has an area of 49,330 sq.mi. Pop.: (June 1937 est.) 15,239,000; (May 22, 1947, census) 12,164,631; (Dec. 31, 1948, est.) 12,408,982. Languages: Czech and Slovak. Religion: mainly Roman Catholic. Chief towns (pop. 1947 census): Prague (cap., 921,416); Brno (272,760); Moravska Ostrava (181,181); Bratislava (172,664); Plzeň (118,152). President of the republic in 1949: Klement Gottwald; prime minister: Antonín Zápotocký.

History.—The main political event in 1949 was the conflict between government and Roman Catholic Church. The hostility of the hierarchy to the rump People's party, the purged remnant of the formerly strong party of Czech Catholic Social Democrats, and to the person of its leader, the suspended Catholic priest Josef Plojhar, a member of the Zápotocký cabinet, had caused serious friction in 1948. Discussion between government and hierarchy for the settlement of outstanding problems began in Feb. 1949 but broke down without agreement. The failure was attributed by the government to Vatican intervention, by the hierarchy to unacceptable interference by the government with church affairs. On June 9 the government set up a body called the Catholic Action committee. It had nothing to do with the Catholic Action organization, but was a Communist-controlled "action committee" similar to those which had been set up at the time of the Feb. 1948 "revolution." It included a number of lay Catholics and some priests, and issued a newspaper called *Catholic News.* Its purpose was to persuade Czech Catholics that the government wished to respect and protect their religion but that the reactionary bishops and the Vatican "in the service of western imperialism" were out to prevent agreement. Archbishop Josef Beran (*q.v.*) of Prague denounced the committee, and threatened all who supported it with "ecclesiastical sanctions." The archbishop's sermon in Prague cathedral was interrupted by Communists on June 19; and he became a prisoner in his own palace. On July 15 a draft law was published, which provided for the payment of priests' salaries by the state, on comparatively generous terms, but gave the government power to interfere in the church appointments and to take action against priests considered hostile to the "popular democratic regime." The law was passed in October and the hierarchy permitted priests to accept salaries under it, since they would otherwise be unable to keep alive. The conflict between church and government was, however, in no way solved. The government controlled the schools and avowedly intended to use them to propagate among the young the "scientific doctrine of Marxism-Leninism." At the same time the government clearly intended to separate at least a part of the Czech Catholic Church from the Vatican. A "national" Czech church could receive sole recognition and, isolated from the outer world, would be at the mercy of the state. Hitherto, with very few exceptions, the Czech and Slovak priests remained loyal to their bishops, and the people to their priests.

The year was marked by a series of conspiracy trials. On Jan. 28 Gen. Heliodor Pika, former head of the Czechoslovak military mission in Moscow and later assistant chief of staff, was condemned to death for espionage. One of the accusations against him was that in 1940 he had passed to the British information about the Red army. The sentence of death was carried out on June 21. Another war hero, Gen. Karel Kutlvašr, organizer of the 1945 rising of Prague against the Germans, was sentenced to life imprisonment on May 16 for espionage on behalf of foreign powers. On Aug. 30 it was announced that another insurrectionary plot had been unmasked; six persons were executed and ten sentenced to life imprisonment. In March, Capt. Philip Wildash, British military permit officer for the western zones of Germany, was arrested by Czech police on a charge of espionage. In October a member of the U.S. embassy, Samuel Meryn, was also arrested on espionage charges.

The 9th congress of the Czechoslovak Communist party was held in May. In the first months of 1949 a "verification" of members was carried out. But at the time of the congress, though more than 500,000 had been reduced to "candidate" status, only 100,000 had been expelled. Clearly this purge was inadequate and more drastic action was bound to follow. The Rajk trial in September (*see* Hungary) "revealed" that nationalistic deviationism and Titoism were rife in the Czech party. During October large numbers of arrests were carried out, including many party members but no prominent leaders.

Perhaps the most significant change in Czechoslovakia's foreign relations during 1949 was the adoption in official circles of a new attitude toward Germany. As soviet policy increasingly organized eastern Germany into a centralized Communist state and gave more support to German nationalism—directed of course against the western powers—the old negative attitude of the soviet satellites to Germany became impossible. Already in February Zdeněk Fierlinger, who had attended a congress of the S.E.D. (Communist) party in the soviet zone, urged a friendly attitude to the new "true democracy" which was arising in soviet Germany. At the party congress in May, Václav Kopecký, minister of information, stated that the test of the "true proletarian internationalism" of Czech Communists would be their relations with the "democratic and progressive elements and popular sections" of Germany whose spokesman was S.E.D.

Agreement was reached on the position of the Hungarian minority in Czechoslovakia and a Czechoslovak-Hungarian treaty of friendship and mutual assistance was signed in Budapest on April 16, 1949. (H. S-W.)

Education.—(1947) Elementary schools 11,836, pupils 998,177; higher grade schools 2,122, pupils 398,721; secondary schools 335, pupils 119,093; technical schools 700, pupils 99,781; universities 7, students 52,456; other institutions of higher education 9, students 5,549.

Finance and Banking.—(In koruny) Budget estimates (1948): revenue 56,896,000,000, expenditure 67,056,000,000; (1949) revenue 89,320,000,000, expenditure 89,278,000,000. National debt (Dec. 1948) 141,891,000,000. Currency circulation (Sept. 1949) 69,200,000,000. Monetary unit: koruna with an exchange rate since Nov. 1945: 50.15 koruny = $1 U.S.

Foreign Trade.—(In koruny) imports (1948) 37,716,000,000; exports (1948) 37,648,000,000.

Transport and Communications.—Roads (1946) 43,969 mi. Licensed motor vehicles (Dec. 1948): cars 155,000, commercial vehicles 54,000. Railways (1947) 8,161 mi.; passenger-mi. (1948) 11,282,000,000; freight net ton-mi. (1948) 7,874,000,000. Telephones (1947): subscribers 350,108.

GIANT BUST of Klement Gottwald, Communist president of Czechoslovakia, being moved through the streets of Prague during a political demonstration in 1949

CZECH FARMER learning to drive a tractor at a government tractor station school in 1949, as part of a government program for mechanizing farming in Czechoslovakia

Agriculture.—Main crops (1948, in metric tons): wheat 1,398,000; rye 1,124,000; barley 925,000; oats 908,000; maize 252,000; potatoes 6,578,000; sugar (raw value) 629,000. Livestock: cattle (Jan. 1948) 3,275,000; pigs (Jan. 1948) 2,566,000; horses (Jan. 1949) 640,000; sheep (Jan. 1948) 386,000; chickens (Jan. 1948) 10,976,000. Food production (1948, in metric tons): milk 2,258,000; butter 22,800; meat 264,000 (beef 118,800).

Industry.—Persons employed in industry, excluding building (June 1949): 1,395,000. Fuel and power (1948): coal (in metric tons) 17,746,000; lignite (in metric tons) 23,591,000; manufactured gas 72,818,000,000 cu.ft; electricity 7,514,000,000 kw.hr. Raw materials (in metric tons): iron ore, metal content (1948) 1,429,000; pig iron (Jan.–Nov. 1948) 1,515,000; steel ingots and castings (Jan.–Nov. 1948) 2,425,000. Manufactured goods (1948): plate glass (in metric tons) 131,000; rayon (in metric tons) 18,000; footwear 63,000,000 pairs; railway trucks, coaches and motor trains 11,000; commercial vehicles 13,000; cement (in metric tons) 1,657,000.

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Dahomey: *see* FRENCH UNION.

Dairy Industry, Bureau of: *see* AGRICULTURAL RESEARCH ADMINISTRATION.

Dairy Products.

Production of milk on farms in the U.S. in 1949 was estimated at nearly 118,000,000,000 lb., compared with 115,500,000,000 lb. in 1948 and a record production of 121,504,000,000 lb. in 1945. This provided for a total milk consumption (in all forms) per person of 742 lb., a near record low, compared with 801 lb. per person as an average for 1935–39. Of the total, 375 lb. were used as fluid milk and cream in 1949, or 10% more than the 340 lb. of 1935–39.

The output of milk per cow was at a new record level of slightly more than 5,150 lb. in 1949, compared with the previous record of 5,036 lb. in 1948, and a prewar average of only 4,403 lb. The number of milk cows on farms at the beginning of the year was 24,450,000, compared with 25,039,000 in 1948 and 26,118,000 average for the previous decade. The value per head increased to $193.00 as of Jan. 1, 1949, from $164 a year previous.

A general decline in the price to the farmer for milk and milk products was in evidence. Late in the year reductions in price at retail began to appear. Cash farm receipts for the sale of milk and dairy products in 1949 was estimated at about $3,750,000,000, as compared with a record of about $4,500,000,000 in 1948. Prices per hundredweight fluctuated between a high of $4.52 in January to $3.59 in June, and averaged nearly 20% lower than in 1948. In November, average prices dropped below parity for the first time since 1941, although the situation varied sharply from one part of the country to another. Retail prices averaged about one cent per quart lower than in the previous year.

The Agricultural act of 1949 made price support mandatory on milk and butterfat at from 75% to 90% of revised parity. This, however, was below the $4.23 per hundredweight received by farmers in Dec. 1949 and the 63.3 cents received for butterfat. The department of agriculture announced that farm prices of butterfat and manufacturing milk would be supported through March 1951 at a national average of approximately $3.07 per hundredweight for milk and 60 cents per pound for butterfat. Cheese would be purchased at 31 cents per pound and evaporated milk at $3.95 per case. Dried milk solids also would be purchased. The dairy product feed price ratios continued favourable.

Stocks of dairy products rose to levels near record for peacetime. Consumption in the U.S. of butter increased about 3% in 1949, as compared with 1948, but the 10.3 lb. used per capita was only 62% as much as prewar. Meanwhile, production of butter in the U.S. in 1949 was estimated at 1,675,000,000 lb., compared with 1,513,000,000 lb. in 1948 and 2,170,000,000 lb. annually before World War II. With lesser consumption of whole milk, supplies of milk for manufactured dairy products were relatively large and the excess was absorbed in making butter, cheese and nonfat powder. More than half the gain in butter output was accumulated in storage in carrying out the price support provisions of the Agricultural act of 1948. Total stocks of butter on Nov. 1 were, in milk equivalent, 2,939,800,000 lb., as compared with 1,693,300,000 lb. a year previous and 2,567,800,000 lb. average prewar.

The price of 92 score butter at Chicago, Ill., fluctuated between a high 63.2 cents per pound in January and a low of 58.8 cents per pound in June, approximately 20 cents per pound below the levels of the previous year. Retail prices averaged about 10 cents per pound higher than wholesale prices.

The U.S. production of cheese in 1949 was estimated at 1,190,000,000 lb., as compared with 1,097,000,000 lb. in 1948 and an average of 669,000,000 lb. in 1935–39. Production per capita was 7.9 lb. in 1949, 7.4 lb. in 1948 and an average of 5.2 lb. in 1935–39, but consumption was estimated only at 7.1 lb. per capita in 1949. Thus stocks accumulated, and late in the year were (in milk equivalent) 1,876,900,000 lb. compared with 1,692,100,000 lb. a year earlier and an average of 1,080,400,000 lb. prewar. Unlike the butter stocks, cheese stocks were largely in commercial hands. Nevertheless, more than 37,000,000 lb. of cheese were purchased by the government under price support operations in 1949.

American cheddar, as in previous years, was the major type produced. Wisconsin continued to hold first place among the states with both standard and specialty types, producing about one-half of the total for the U.S. Prices were comparatively stable near the government support price—ranging from 37.1 cents per pound wholesale at Chicago in January to a low of 33 cents in July, compared with an average of 45.5 cents per pound in 1948.

The 1949 U.S. production of ice cream was estimated preliminarily to have used 6,575,000,000 lb. of milk, or 43.8 lb. per person, as compared with 6,790,000,000 lb. in 1948 and a record in 1946 of 8,196,000,000 lb., but nevertheless well above the restricted production of the war period. Thus consumption in 1949 was about 25% below the record of 1946 but still about 75% above the prewar level.

Production of nonfat dry milk solids in 1949 was a record of 885,000,000 lb., compared with 659,000,000 lb. in 1948 and 243,000,000 lb. prewar. Domestic requirements were only a little more than one-half of production, so 40% to 50% of the output in 1949 was purchased by the government as a price support measure for manufacturing milk.

Production of dry whole milk had been declining—in 1949 it was 130,000,000 lb., compared with a wartime (1945) peak of 217,000,000 lb. and a prewar level of production of only 19,000,000 lb. Domestic consumption accounted for less than half the total.

Production of evaporated milk in the U.S. in 1949 was substantially below recent record levels and mounted to 3,295,000,000 lb., compared with 3,831,000,000 lb. the previous year. Stocks late in the year were 7% lower than in 1948, after starting 1949 at record levels.

An important factor, other than the critical dollar shortage, in the falling off of U.S. exports of dairy products in 1949 was the rather sharp increase in milk production in foreign countries. In western Europe, milk production in the second quarter of 1949 was reported to be 28% larger than a year earlier.

FILMS OF 1949.—*We Make Butter* (Young America Films Inc.).

(J. K. R.)

Dams. The continuing effort of governments throughout the world to raise living standards by increased irrigation and hydroelectric power facilities resulted in increased activity during 1949 in the construction of dams.

In the United States, the U.S. bureau of reclamation began pouring concrete on Sept. 7 at Hungry Horse dam in Montana, world's fourth largest concrete dam. Diversion of the river was begun in the spring, and by the middle of the summer the 1,000,000 cu.yd. of earth and rock excavation required to prepare the foundation was more than 75% completed. The excavation disclosed the necessity for a deeper foundation than had been originally contemplated. The resulting increase in height of the dam above its foundation would make it the third highest dam in the world.

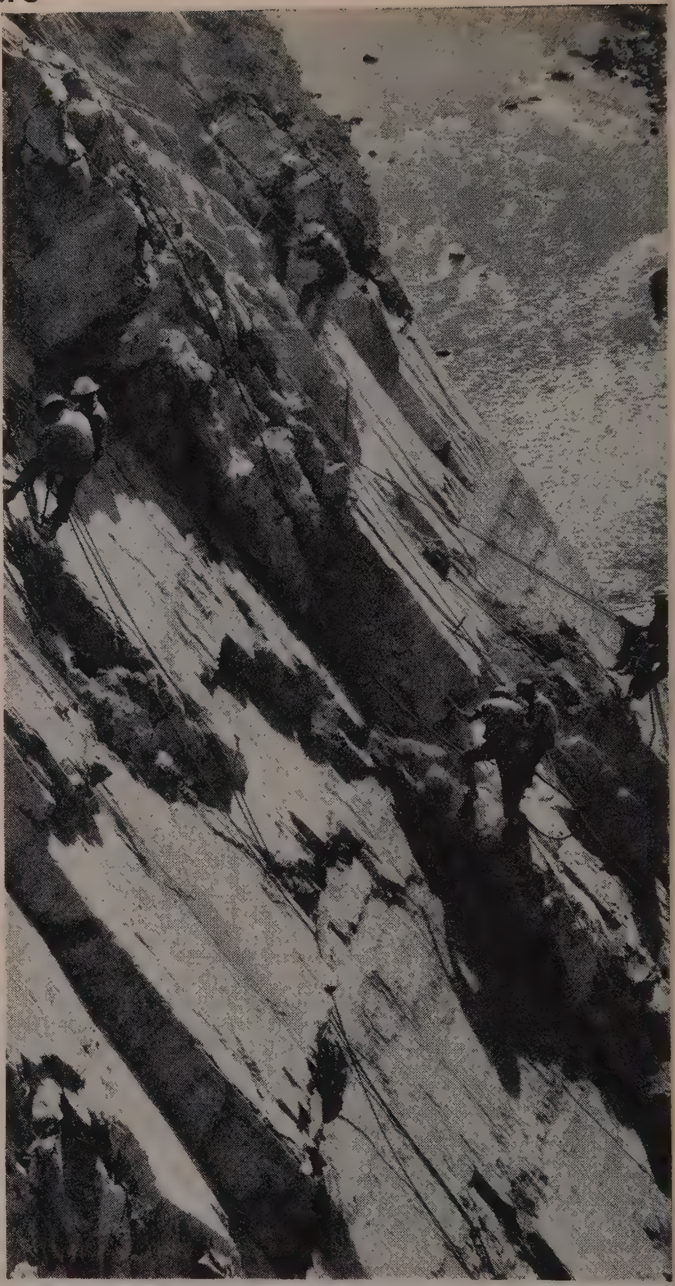
Davis dam, on the Colorado river below Hoover dam, was completed in April, ten months after the river was diverted, and three months ahead of schedule. A new record for earth placement on work of the U.S. bureau of reclamation was established with the placing of 730,000 cu.yd. of earth in one 30-day period.

At Garrison dam, principal unit in the U.S. army engineers' joint program with the U.S. bureau of reclamation for the development of the Missouri river basin, 1,000,000 cu.yd. of earthfill were placed in one week in July, with a maximum of 176,000 cu.yd. in one 24-hr. period.

The construction of three 200-ft.-high earthfill dams for the water supply of New York city was not sufficiently advanced to avert a serious water shortage in the fall of 1949, which was caused by drought and increased consumption. The construction program had been interrupted by World War II, and the first of the three dams, Merriman dam on Rondout creek, was not expected to store water before the spring of 1950.

In Mexico, the President Alemán dam was underway in 1949. One of five dams in the Papaloapan Valley development program, it would be the largest in Central or South America and would store 5,000,000 ac.ft. of water.

The Santa river dam in Peru was completed in 1949. Its unique downstream face is vertical to avoid erosion from heavy debris expected to pass over the 78-ft.-high masonry spillway. Throughout South America dams for hydroelectric projects were being undertaken with funds provided by the International Bank for Reconstruction and Development and the U.S. Export-Import bank.



JACKHAMMERMEN, working in pairs for safety, shown drilling holes in the sheer canyon wall above the Hungry Horse damsite in Montana, in 1949. Dynamite was then placed in the holes and exploded, blasting away surface rock and exposing the solid bedrock which was to support the huge concrete dam

In India, preliminary construction, preparatory to the construction of the Hirakud dam, India's largest, was nearly complete by the end of 1949. Located on the Mahanadi river in Orissa province, it was to be 132 ft. high, 15,700 ft. long and would have a gross storage of 5,300,000 ac.ft. for power and irrigation. Three other projects of the central board of irrigation, the Tunga Bhadra in Madras, the Bhakra in the East Punjab, and the Damodar valley in Bihar and West Bengal, were also under construction in 1949.

The largest dam in East Africa was under construction in 1949 on the Ruiru river to provide a water supply for Nairobi, capital of Kenya. A contract was awarded in the fall of 1949 to construct a concrete and stone masonry dam, 85 ft. high and 2,725 ft. long, at Owen falls on the White Nile river, below Lake Victoria, in Uganda. The dam would raise the level of Lake Victoria one metre, making it the largest reservoir in the world.

In Scotland, the Loch Sloy dam, part of the second largest

Chief Dams Completed or Under Construction During 1949

Name of Dam	River	Place	Type	Maximum Height, Ft.	Crest Length, Ft.	Volume (Cu.yd.)	Purpose*	Built by	Progress†
latoona	Etowah	Georgia, U.S.	Concrete gravity	200	1,250	525,000	F,P	U.S. army engineers	C
varo Obregón (Oviachic)	Yaqui	Sonora, Mexico	Earthfill	187	—	11,143,300	I	Secretaria de Recurcos Hidraulicos	U
l Shoals	White	Arkansas, U.S.	Concrete gravity	283	2,256	2,100,000	F,P	U.S. army engineers	U
stelo-do-Bodo	Zezere	Portugal	Concrete arch	377	—	523,000	P	———	U
vis	Colorado	Arizona, U.S.	Earth and rockfill	138	1,600	4,230,000	P	U.S. bureau of reclamation	C
rt Randall	Missouri	South Dakota, U.S.	Earthfill	160	10,000	30,000,000	F,N,P,W	U.S. army engineers	U
al Oya	Gal Oya	Ceylon	Earthfill	154	4,000	6,000,000	I,P	———	U
arrison	Missouri	North Dakota, U.S.	Earthfill	210	12,000	68,511,000	I,F,N,P	U.S. army engineers	U
ngry Horse	Flathead, S. Fork	Montana, U.S.	Concrete arch gravity	564	2,115	3,331,000	I,F,P	U.S. bureau of reclamation	U
ch Sloy	Loch Sloy	Scotland	Concrete buttress	165	1,160	—	P	North of Scotland Hydroelectric board	U
erriman	Rondout	New York, U.S.	Earthfill	200	2,500	6,600,000	W	N.Y. board of water supply	U
ahe	Missouri	South Dakota, U.S.	Earthfill	230	9,300	78,000,000	F,I,N,P	U.S. army engineers	U
. Mary	St. Mary	Alberta, Canada	Earthfill	191	2,536	4,500,000	I	Prairie Farm Rehabilitation administration	U
n Angelo	North Concho	Texas, U.S.	Earthfill	128	37,540	18,000,000	F	U.S. army engineers	U
ewartville	Madawaska	Ontario, Canada	Concrete gravity	206	1,300	260,000	P	Hydroelectric Power Commission of Ontario	C

*F—flood control, I—irrigation, N—navigation, P—power, W—water supply. †C—completed in 1949, U—under construction.

ydroelectric project in Great Britain, neared completion at the nd of 1949.

The table above lists 15 important dams of the world com- leted or under construction during 1949. (*See* also AQUEDUCTS; RRIGATION; TENNESSEE VALLEY AUTHORITY.) (B. O. M.)

ance.

United States.—The Sadlers' Wells Ballet of London made its American debut, enjoying a success hich stimulated interest in the ballet throughout the country. irected by Ninette de Valois, Frederick Ashton, and Constant ambert, the company opened at the Metropolitan Opera ouse, New York, N.Y., in Oct. 1949 in a full-length version f Peter Tschaikovsky's *Sleeping Beauty*, with Margot Fonteyn the title role. Later productions included a complete *Swan ake* and ballets choreographed by De Valois, Ashton and Rob- rt Helpmann. Leading dancers were Fonteyn, Ashton, Help- ann, Moira Shearer, Beryl Grey, Pamela May, Violetta Elvin, arold Turner, Michael Somes, John Hart and Alexis Rassine.

The New York City Ballet, directed by Lincoln Kirstein, pro- uced Jerome Robbins' ballet *Guests*, with music by Marc Blitz- ein, and revived Antony Tudor's *Time Table*, with a score by aron Copland and décor by James S. Morcom. George Balan- hine choreographed *Bourrée fantasque*, to music by Emmanuel habrier, and a brilliant new version of Igor Stravinsky's *Fire- ird*, with Maria Tallchief in the title role, and décor by Marc hagall. Janet Reed, Melissa Hayden, and Frank Hobi joined e company; other leading dancers were Tanaquil le Clerq, eatrice Tompkins, Francisco Moncion, Todd Bolender, Her- ert Bliss and Nicholas Magallanes.

Ballet Theatre reorganized after a period of inactivity which ad lasted since the spring of 1948. Directed by Lucia Chase nd Oliver Smith, with the collaboration of Antony Tudor, it pened in New York city on April 17. Principal dancers were ora Kaye, who danced her first *Giselle*, Igor Youskevitch, ugh Laing, Janet Reed, Paul Godkin, Diana Adams and Bambi inn, with Nana Gollner, Maria Tallchief and Jerome Robbins s guest artists. *La Fille Mal Gardée* was revived. During the ummer of 1949 Ballet Theatre appeared at Jacob's Pillow, Lee, ass.

The Ballet Russe de Monte Carlo toured extensively and had pring and autumn seasons in New York city. Ruth Page's *Love ong* to Franz Schubert's music was presented March 1, and ere was a revival of Michel Fokine's *Carnaval*. New autumn roductions included a one-act version of *Paquita* by Alexandra anilova, with music by Edouard Deldevez; *Birthday*, choreo- raphed by Tatiana Chamie to music by Gioacchino Rossini, nd revivals of *The Mute Wife*, *Igrouchki*, and *Graduation Ball*. March, Alicia Markova and Anton Dolin appeared as guest rtists while Alexandra Danilova and Frederic Franklin danced London. Other soloists included Nathalie Krassovska, Ruthanna Boris, Mary Ellen Moylan, Leon Danielian and Nina Novak.

The Image in the Heart, with a score by John Coleman, had its *première* at a special New York performance of ballets choreographed by Todd Bolender. The Ballet Repertory company, headed by Arthur Mahoney and Thalia Mara, made two appearances. The Page-Stone Ballet, which made a long tour, presented the *première* of *Beauty and the Beast* with choreography by Ruth Page and music by Tschaikovsky.

The New York City Dance Theatre, organized under the auspices of the City Center of Music and Drama, held its first season of modern dance works in December. The dancers included Charles Weidman, José Limon, Valerie Bettis, Pauline Koner, Nina Fonaroff, Letitia Ide, Betty Jones, Nadine Gae, Iris Mabry, Beatrice Seckler, Katherine Litz, Eve Gentry, Lucas Hoving, Merce Cunningham, Jane Dudley, Sophie Maslow, William Bales, and the New Dance Group, in works choreo-

MOIRA SHEARER (left) in the title role of *Cinderella*, with Frederick Ashton as one of the Ugly Sisters, during a 1949 performance of the three-act ballet at Covent Garden, London. Choreography for the new Sadler's Wells production was by Ashton, with ballet music by Sergei Prokofiev graphed by Doris Humphrey, Hanya Holm, Weidman, Limon, Maslow and others. Weidman's *Rose of Sharon,* with music by Lukas Foss, had its *première* Dec. 20.

In October Roland Petit's Ballets de Paris, headed by Renée Jeanmaire, Colette Marchand and Gordon Hamilton, presented Petit's *Carmen, L'Oeuf à la Coque, Le Rendez-vous* and *Pas d'Action,* and William Dollar's *Le Combat.*

José Limon and his company presented the *première* of *La Malinche* with music by Norman Lloyd, and *Corybantic* choreographed by Humphrey to music by Béla Bartók. Uday Shankar returned to the United States for concert appearances, after an absence of 11 years.

Two experimental groups, the Choreographers' Workshop, directed by Trudy Goth, and Theatre Dance, Inc., presented new works by young choreographers, including Valerie Bettis, Myra Kinch, Jean Erdman, Gertrude Lippincott, Jean Houloose, Virginia Johnson, Betty Lind, Frank Westbrook, Tony Charmoli, Alan Banks and Nelle Fisher.

In television, dance activity expanded. A ballet series showed new works by George Balanchine, Todd Bolender, Paul Godkin and Michael Kidd. Ballet Theatre was televised in *Pas de Quatre* and *La Fille Mal Gardée;* Gollner and Youskevitch danced a condensed *Swan Lake.*

Summer dance festivals were held at Jacob's Pillow and at Connecticut College, New London. Jacob's Pillow saw the *premières* of Ted Shawn's *The Dreams of Jacob,* Ruth Page's *Harlequinade* and Bentley Stone's *Reunion.* Connecticut College gave a number of new works, including José Limon's *The Moor's Pavane,* Doris Humphrey's *Invention,* Bettis' *Domino Furioso* and Maslow's *Festival.*

Civic ballet groups were active during the year. The Chicago Ballet Guild gave *Indian Lament.* A complete production of Tschaikovsky's *Nutcracker,* choreographed by Willam Christensen, was presented by the San Francisco Ballet, which also gave his *Parranda,* with a score by Morton Gould, and Lew Christensen's *Vivaldi Concerto.* The Pacific Dance Theatre presented new ballets by Serge Temoff, Walton Biggerstaff, Ann Halprin and Welland Lathrop. Lasar Galpern organized the Concert Ballet for appearances in southern California. The Dance Theatre company, headed by Lester Horton, gave performances in Los Angeles. The New Orleans Opera association presented Stravinsky's *Petrouchka* with choreography by Leila Haller. Angna Enters, Martha Graham, Iva Kitchell, Rosario and Antonio, La Meri, Mia Slavenska, Marina Svetlova and Charles Weidman made extensive tours.

Pearl Primus was awarded a Rosenwald fellowship for dance research in Africa; Doris Humphrey received a Guggenheim fellowship to write a book on choreography. The Donaldson awards for Broadway performances went to Viola Essen, for her dancing in *Along Fifth Avenue,* and Gower Champion, for his choreography for the revue *Lend an Ear.* The Dance Film society was organized in New York city.

England.—The Sadlers' Wells Ballet appeared at Covent Garden in *Cinderella,* with choreography by Ashton and music by Sergei Prokofiev. There were revivals of Ashton's *Wedding Bouquet* and *Apparitions.* Margot Fonteyn reappeared on Feb. 25, after a long absence due to a leg injury. The company also appeared at the Musical May festival in Florence, Italy. The Sadlers' Wells Theatre Ballet presented *Sea Change,* with choreography by John Cranko and music by Jan Sibelius, and revived *Étude* and *Casse Noisette.*

Ballet Rambert returned to England after a long tour of Australia and New Zealand and appeared in London and the provinces. Two new works were presented: *Kaleidoscope* and *Antonia,* with choreography by Walter Gore. Nathalie Krassovska and Vladimir Skouratoff made guest appearances.

The Metropolitan Ballet toured England, Belgium, the Netherlands and Switzerland. New works were *Ballamento, Topaz, Trio détruit,* and *Pleasure Drome,* choreographed by Rosella Hightower to music by John Lanchbery.

The Grand Ballet de Monte Carlo danced at Covent Garden during the summer, presenting one world *première, The Enchanted Mill.*

Markova and Dolin made a long tour of South Africa and the English provinces, and danced in London. International Ballet toured England, presenting one new ballet, *Visions,* choreographed by Julian Algo of Stockholm, Swed. Mona Inglesby, prima ballerina, returned to the company in September after an absence due to illness.

The Ballets des Champs Élysées, directed by Boris Kochno, appeared at the Edinburgh festival, and in London, presenting several works new to Great Britain: *L'Amour et son Amour,* the first choreographic work of Jean Babilée, with music by César Franck; *La Rencontre,* choreography by Lichine, music by Henri Sauguet, and a revival of *La Nuit.*

France.—The Paris Opera suspended its première danseuse étoile, Yvette Chauviré, for one year, and replaced her with Nina Vyroubova, 27-year-old Russian ballerina educated in France. On Feb. 2, Serge Lifar reappeared for the first time since the liberation of France. The opera produced Lifar's *Endymion* and *Le Chevalier errant,* and revived the dances from *Prince Igor.* Josette Clavier made an impressive debut in *Entre deux Rondes,* choreographed by Lifar to Marcel-Samuel Rousseau's music.

The Paris Opéra Comique produced *Etude* and *Fantaisie impromptu,* both with choreography by Jean-Jacques Etcheverry and music by Frederic Chopin, and revived De Falla's *Le Tricorne.*

The Marquis de Cuevas' Grand Ballet de Monte Carlo toured Europe and North Africa. Its new productions were *Infanta, In Memoriam,* and *Del Amor y de la Muerte,* while *Mad Tristan, The Good-Humored Ladies,* and *Le Tricorne* were revived. Principal dancers were Tamara Toumanova, André Eglevsky, Rosella Hightower, George Skibine, Tatiana Riabouchinska and Lichine.

Canada.—The first Canadian ballet festival, in which ten groups from all parts of the dominion participated, was held at Toronto in March. The Volkoff Ballet of Toronto and the Ruth Sorel Montreal Ballet made one joint appearance in New York city, under the auspices of the Choreographers' Workshop. The Sadler's Wells Ballet appeared in Toronto, Ottawa and Montreal.

Austria.—In Salzburg, Hanna Kammer choreographed De Falla's *Three-Cornered Hat* and Gnecchi's *Atalanta.* In Vienna, the Staatsoper presented three ballets with new choreography by Erika Hanka: *The Legend of Joseph, Don Juan* and *Hoellische G'schicht.* The Third International Music festival featured group works by Rosalia Chladek and Elinor Tordis. Solo performances were given by Harald Kreutzberg, Lillian Moore, and Pola Nirenska.

Czechoslovakia.—In Prague, Tschaikovsky's *Sleeping Beauty* was given at the State Opera, with choreography by Sasha Machov. Galina Ulanova and Tamara Chanum made guest appearances, and the Polish Army ballet appeared in *Janko the Musician* and *Village Wedding.* In Brno, Vania Psota staged *Work Symphony* to music by Tschaikovsky.

Germany.—The Berlin Staedtische Opera presented Werner Egk's ballet *Abraxas* with choreography by Janine Charrat. The Essen Folkwang Tanztheater was reorganized under the direction of Kurt Jooss, who returned to Germany for the first time since 1933, with Hans Zuellig as his assistant. In Munich, Rudolph Koelling choreographed *Orpheus, Sacre du Printemps, Scheherazade, La Rosière* and *Don Juan.* Mary Wigman taught

EXHIBITION SQUARE DANCING, in 1949, by students of Normandy high school, Normandy, Mo.

in Dresden.

Italy.—The Sadler's Wells Ballet and Harald Kreutzberg danced at the May festival in Florence, where Boris Romanoff staged Monteverdi's *Orfeo* and Cimarosa's *Il Maestro di Capella.* At La Scala, Milan, Leonide Massine staged *The Four Seasons* and *Gaîté parisienne.* At the Rome opera, Aurel Milloss revived his *La Dame aux Camélias.* Romanoff staged Gounod's *Walpurgis Night* at the Baths of Caraculla, Rome, and Darius Milhaud's *La Sagesse,* with a libretto by Paul Claudel and costumes by Benois, in Perugia. An international folk dance festival was held in Venice. In Syracuse, Sicily, Rosalia Chladek staged the dances for the *Medea* of Euripides and *The Cyclops* of Aeschylus.

Netherlands.—The Ballet of the Low Countries presented *Street of Imagination, Les Petits Riens* and *The Bewitched Costumes.*

U.S.S.R.—A new ballet, *Mirandolina,* with music by Vasilenko, had its *première* at the Bolshoi theatre, Moscow, where the company was headed by Ulanova, Semenova, Olga Lepeshinskaya, and Vachtang Chabukiani. *Ruby Stars,* with music by Andrei Balanchivadze (brother of George Balanchine) and *Stoneflower,* with music by Prokofiev, were in preparation. A new ballerina, Raisa Struchkova, came into prominence.

Scandinavia.—In Copenhagen, Harald Lander celebrated his 25th anniversary as a dancer. *Coppélia* was revived, with Margot Lander. Margot Fonteyn and Robert Helpmann made one guest appearance. *Aurora's Wedding* was staged by Hans Brenaa, under the supervision of Lubov Egorova. Antony Tudor was engaged as choreographer of the Royal Opera, Stockholm.

The New Norwegian Ballet, directed by Louise Browne, was active in Oslo and made a guest appearance at the Doncaster Arts festival, in England.

South America.—The Ballet Alicia Alonso made a long tour through South America, appearing in Cuba, Mexico, El Salvador, Guatemala, Argentina, Brazil, Uruguay, Ecuador and Peru. *Sombras,* choreographed by Alberto Alonso to music by Sibelius, had its *première* in Lima, Peru. Nicholas Magallanes replaced Igor Youskevitch as premier danseur, and was later replaced by Luis Trapaga.

Margarete Wallman remained as ballet mistress of the Colon theatre, Buenos Aires, but new ballets were staged by several guest choreographers. Jan Cieplinski choreographed *The Woodcut Prince* and *El Pillan.* Aurel Milloss staged *Bolero, Neapolitan Burlesque Scenes* and *Orpheus,* and David Lichine arranged *Sueño de Nina.*

FILMS OF 1949.—*Steps of the Ballet* (British Information Services and D. D. Livingston). (LN. M.)

Ballroom Dancing.—During 1949 there were two marked, completely different influences in ballroom dancing. One widespread interest was in square dancing and the other in Cuban rumba. Designers promoted square dance fashions; the dance was seen on television, in newsreels and in magazines. Bookshops reported a demand for instructions.

In the United States, the popularity of the rumba became second only to that of the fox trot. The Mambo, with its new syncopated rhythm, was the most popular rumba with expert dancers.

There was a decreased interest in jitterbug, and the tango was danced only in cosmopolitan centres. The samba grew in popularity, as evidenced by the great number of new compositions. The waltz gained popularity from the appearance of new song hits, such as those from the outstanding stage show, *South Pacific.* (A. MU.)

Dates: *see* FRUIT.
DDT: *see* ENTOMOLOGY.

Deafness.

In 1949 otologists further improved the diagnostic procedure to select hard-of-hearing cases most likely to benefit from fenestration operation. The operation, no matter how well performed, unfortunately did not re-establish normal hearing.

Roughly estimated, there were 12,000 fenestration operations in the United States as of 1949, of which about 70% gave practical, serviceable natural hearing.

Most hard-of-hearing persons continued to be rehabilitated by means of a hearing aid. A hearing loss of 30–35 decibels (sound level units) in both ears within the speech frequency range was declared as a handicapping loss. The hard-of-hearing person was advised to have his ears examined by a physician before purchasing a hearing aid. Essential to good performance was a comfortable ear mould, made before attempting to select a hearing aid. New clinics appraised the hearing of a deafened person and provided an opportunity to try out a large number of acceptable hearing aids. This service assisted many difficult cases to the successful wearing of a hearing aid. There were also hearing aid bureaus in many local branches of the American Hearing society in some 117 cities. These bureaus helped deafened individuals to select hearing aids by permitting the individual to try out the instruments on display at the bureau.

Most of the hearing aids sold in 1949 were of the "single unit" type in which all of the components were packed in a single case with the exception of the receiver and its connecting wire. Hearing aids weighed approximately five to six ounces complete and cost from $75 to $200. In general, the difference in price was attributed largely to the amount of free service rendered to the hard-of-hearing after purchase of an aid. The upkeep for maintaining batteries was approximately ten cents a day on an eight-hour operational basis.

In 1949, there was no reliable census of adults totally deaf in the United States, but a rough estimate indicated that there were about 100,000. Approximately 18,000 deaf children were being educated in 64 public residential schools, 118 public day schools and 20 denominational and private schools in the United States. Mothers of deaf children were advised to seek information about early training so that a child's native ability would not necessarily be retarded. Lip reading was preferred to the use of sign language.

In 1949 there were about 10,000,000 to 15,000,000 people in the United States who were hard-of-hearing to some extent in one or both ears, but only 4,000,000 were believed to have serious handicaps. At least 3,000,000 required hearing aids or used lip reading or both. Probably no more than 900,000 used hearing aids. Estimates indicated at least 1,000,000 hard-of-hearing children in public schools, not sufficiently handicapped to require hearing aids or the fenestration operation.

A list of accepted hearing aids and requirements for acceptance were obtainable from the Council on Physical Medicine and Rehabilitation, American Medical association, 535 N. Dearborn St., Chicago, Ill.

(*See* also Ear, Nose and Throat, Diseases of.)

(H. A. C.)

Deaths (of prominent persons in 1949): *see* Obituaries.

Death Statistics.

Provisional records for the first nine months indicated that the death rate in the United States during 1949 was about 3% below that for 1948. For the latter year, the estimated number of deaths was 1,449,000, and the death rate 9.9 per 1,000 population. Canada experienced a small reduction in mortality from 1948 to 1949; according to provisional data there were 119,352 recorded deaths in 1948, with a death rate of 9.3 per 1,000. Reports from England and Wales for the first nine months of 1949 pointed to a definite rise in mortality since 1948, when the country as a whole experienced 469,897 deaths and a rate of 10.8 per 1,000. Australia, in 1948, had a death rate of 9.9 per 1,000, and New Zealand (excluding the Maoris) a rate of 9.1 per 1,000.

According to the nine months' mortality experience of the millions of industrial policyholders of the Metropolitan Life Insurance company who reside in the United States and Canada, the year 1949 indicated lower death rates than 1948 from pneumonia, tuberculosis, syphilis, the principal cardiovascular-renal diseases, appendicitis, the puerperal state, homicide and accidents. The severe outbreak of acute poliomyelitis brought the death rate from this cause in 1949 to more than double that of 1948; the only other causes of importance to show a rise were cancer and diabetes mellitus. The number of deaths and the death rates for the ten leading causes of death in the entire United States in 1948, the latest year available, are shown in Table I, with comparable rates for 1940.

Table I.—*Deaths and Death Rates per 100,000 Population for the Ten Leading Causes of Death; United States*

Cause of Death	1948 Number*	1948 Rate*	1940 Rate	Per cent change since 1940
All Causes	1,449,000	991.7	1074.1	− 7.7
Heart disease	473,434	324.0	291.9	+11.0
Cancer	195,432	133.8	120.0	+11.5
Cerebral haemorrhage	130,736	89.5	90.8	− 1.4
Nephritis	76,555	52.4	81.4	−35.6
Accidents, excluding motor vehicle accidents	66,648	45.6	47.3	− 3.6
Pneumonia and influenza	55,849	38.2	70.1	−45.5
Tuberculosis	44,129	30.2	45.8	−34.1
Premature birth	39,684	27.2	24.5	+11.0
Diabetes mellitus	39,135	26.8	26.5	+ 1.1
Motor vehicle accidents	33,360	22.8	26.1	−12.6

*Estimated

Some of the rise in the death rate from heart disease, cancer and diabetes mellitus since 1940 was due to the increase in the proportion of the aged in the population; the rise in the death rate from premature birth may be associated with the increased birth rate.

Maternal mortality in the United States also reached new low levels; in 1948 there were only 4,071 deaths from this cause, as compared with 4,978 in 1947. The maternal mortality rate in 1948 was 1.1 per 1,000 live births, or less than one-half of the rate for 1944 and not quite one-third of the rate for 1941. Although both the white and nonwhite segments of the population shared in these improvements, the level of the maternal mortality rate for nonwhites was three times that for the whites in 1947. For both races combined, maternal mortality in 1947 was at a minimum of only 0.8 per 1,000 live births to women at ages 20 to 24, but the rate rose steadily with advance in age to a high of 9.2 for women 45 and over. For women of all ages, the maternal mortality rate in 1947 was 0.4 per 1,000 live births from puerperal septicaemia, 0.4 from puerperal toxaemia, 0.4 from haemorrhage, trauma or shock and 0.1 from other puerperal causes. The maternal mortality rate for Canada in 1948 was 1.5; that for England and Wales was 0.9 per 1,000 live births, and New Zealand had a rate of 1.3.

Death rates according to age and sex for the population of the United States in 1948 are compared with 1940 in Table II. Females at ages 1 to 14 in 1948 had a rate as low as 0.8 per 1,000 population of those ages, while the rate for males was somewhat higher, namely 1.1 per 1,000. These rates rose steadily with advance in age to a level, at ages 65 and over, of 74 per 1,000 for males and 60.1 per 1,000 for females. In each sex and age category, the death rates for 1948 were well below those for 1940.

An estimate was made of the lives saved in 1947 alone by the reduction in mortality in the brief period since 1940 (*Statistical Bulletin,* Metropolitan Life Insurance company, May 1949). If

Table II.—*Death Rates for All Causes per 1,000 Population According to Age and Sex; United States*

Age, Years	Males 1948	Males 1940	Males Per cent decrease	Females 1948	Females 1940	Females Per cent decrease
All ages	11.4	12.0	− 5.0	8.5	9.5	−10.5
Under 1	39.3	61.7	−36.3	30.1	47.7	−36.9
1 to 14	1.1	1.7	−35.3	0.8	1.4	−42.9
15 to 24	1.9	2.3	−17.4	1.1	1.8	−38.9
25 to 44	3.5	4.5	−22.2	2.4	3.5	−31.4
45 to 64	17.1	17.9	− 4.5	10.1	12.4	−18.5
65 and over	74.0	77.6	− 4.6	60.1	66.2	− 9.2

e population of the United States in 1947 had experienced the eath rates of 1940, there would have been 267,000 more deaths 123,000 males and 144,000 females); there would have been 7,000 more deaths from pneumonia and influenza, 51,000 more rom the cardiovascular-renal diseases, 18,000 more from tu- erculosis, 13,000 more from diarrhoea and enteritis, 4,900 more rom the principal communicable diseases of childhood, 3,700 ore from diabetes mellitus, 11,000 more from accidents, but ,000 fewer from cancer. Of the total lives thus saved, more an one-fourth were under one year of age and almost one- urth were at ages 65 and over.

As a result of reductions in mortality, the expectation of life t birth in the U.S. rose by 3.2 yr. from 1939–1941 to 1947 hen a level of 66.8 yr. was reached (the latest available fig- re). Compared with the situation of a century ago, in 1850, hen the expectation of life at birth was 40 yr., the latest gure established a rise of about 27 yr., or by two-thirds. Ac- ording to mortality conditions in 1947, the expectation of life t birth was 65.2 yr. for white males, 70.5 yr. for white females, 7.9 yr. for Negro males, and 61.9 yr. for Negro females. At age o, the respective figures for expectation of life were 30.6 yr., 4.7 yr., 27.1 yr. and 30.3 yr. (*See* also ACCIDENTS; CENSUS ATA, U.S.; DISASTERS; INFANT MORTALITY; SUICIDE STATIS- ICS.)

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(M. SP.)

ebt, National. The gross public debt of the U.S. government at the end of 1949 was $257,130,- 00,000—$4,330,000,000 larger than the total of $252,800,000,- 00 at the end of Dec. 1948. All of the increase occurred in he second half of the year. In his budget message of Jan. 9, 950, Pres. Harry S. Truman estimated that, as a reflection of udget deficits, the national debt would be increased to $258,- 00,000,000 by June 30, 1950, and to $263,800,000,000 by June 0, 1951. (*See* Table I.)

Table I.—*National Debt of the United States*

June 30	(Millions of dollars)	June 30	(Millions of dollars)
913	$1,193	1933	$ 22,539
914	1,188	1934	27,053
915	1,191	1935	28,701
916	1,225	1936	33,545
917	2,976	1937	36,427
918	12,244	1938	37,167
919	25,482	1939	40,445
920	24,298	1940	42,971
921	23,976	1941	48,961
922	22,964	1942	72,422
923	22,350	1943	136,696
924	21,251	1944	201,003
925	20,516	1945	258,682
926	19,643	1946	269,422
927	18,510	1947	258,286
928	17,604	1948	252,292
929	16,931	1949	252,770
930	16,185	1950	258,400
931	16,801	1951	263,800
932	19,487		

urce: Data from 1913 to 1949 are from U.S. Department of the Treasury, daily easury statement (revised); 1950 and 1951 are estimates from President Truman's Jan. 950 budget message.

The increase in the U.S. public debt in 1949 followed three uccessive years of debt reduction. At the end of 1948 the na- ional debt was $26,414,000,000 below the peak total of $279,- 14,000,000 reached at the end of Feb. 1946. This sharp re- uction during the 1946–48 period marked a reversal of the pward trend apparent from the onset of the depression of the 930s.

The postwar debt-retirement program of the U.S. treasury volved a gross reduction in marketable interest-bearing se- urities of $44,686,000,000 from March 1946 to the end of 1949. The distribution of this reduction among the various types of securities is shown in Table II.

Table II.—*Decrease in Marketable Interest-Bearing Public Debt**

(Millions of dollars)

	1946	1947	1948	1949	
	Mar. 1–Dec. 31	Jan. 1–Dec. 31	Jan. 1–Dec. 31	Jan. 1–June 30	July 1–Dec. 31
Treasury bills	−1	1,897	2,912	688	−783
Certificates of indebtedness	11,426	8,767	−5,305	−2,902	−209
Treasury notes	9,461	−1,284	4,244	3,535	−4,653
Treasury bonds—bank restricted	3,791	0	0	0	0
Treasury bonds—bank eligible	−1,479	1,460	6,423	1,015	5,667
Postal savings and other bonds	1	14	1	1	1
Total marketable interest-bearing public debt	23,197	10,854	8,276	2,335	24

*Negative figures denote increases.
Detail will not necessarily add to totals because of rounding.
Source: U.S. Department of the Treasury.

Table III furnishes data on the sources of funds for the reduction in the marketable interest-bearing public debt. The funds used to retire aggregate maturities of $23,197,000,000 during the last ten months of 1946 were obtained chiefly from the general fund cash balance accumulated by the Victory Loan drive. In 1947, 1948 and the first half of 1949 funds for reducing the marketable public debt were derived mainly from the growth in nonmarketable issues and from budgetary surpluses. In the second half of 1949, when the decrease in marketable securities was nominal, the further substantial increase in nonmarketable obligations was offset by a budget deficit and an increase in the general fund balance. As a result of the substantial reduction in marketable issues, together with the increase in nonmarketable issues, the portion of the total public debt constituted by marketable interest-bearing obligations declined from 72% in March 1946 to 60% at the end of 1949.

Table III.—*Sources of Funds for Reduction in Marketable Interest-Bearing Public Debt*

(Millions of dollars)

	1946	1947	1948	1949	
	Mar. 1–Dec. 31	Jan. 1–Dec. 31	Jan. 1–Dec. 31	Jan. 1–June 30	July 1–Dec. 31
1. Reduction in general fund balance	22,459	405	−1,111	738	−1,209
2. Net budgetary surplus	−1,714	2,434	3,885	1,064	−3,300
3. Net receipts in trust accounts, etc.*	−681	−590	1,326	−1,773	148
4. Increase in nonmarketable public debt	3,132	8,605	4,177	2,305	4,384
Savings bonds	1,084	2,312	2,998	1,208	447
Special issues	3,688	4,370	2,759	1,062	1,120
Other debt	−1,640	1,923	−1,580	35	2,817
5 Decrease in interest-bearing marketable public debt (1, 2, 3, 4)	23,197	10,854	8,276	2,335	24
6. Net decrease in total public debt (5, 4)	20,065	2,249	4,100	30	−4,360

*Includes transactions of Foreign Economic Cooperation Trust fund, 1948–49.
Detail will not necessarily add to totals because of rounding.
Source: U.S. Department of the Treasury.

The significance of federal-debt management in 1949 can best be viewed against the background of previous management operations. The maintenance of order and stability in the government bond market—a policy initiated in the pre-World War II period—was a primary objective of the debt-management program in the war and postwar periods. In line with this objective, the prewar structure of interest rates was maintained with only minor variation during the war, permitting the authorities to finance cheaply the huge requirements of war finance.

In the postwar period, the stabilization of the government bond market, a joint treasury-federal reserve function, required different policies to meet changing conditions. Beginning in the spring of 1947, for example, several steps were taken to control an incipient boom in the government bond market. But in 1948, when a downward pressure on government bond prices developed, the federal reserve system shifted its policy. It supported the market through substantial purchases of government bonds from investment institutions and other nonbank holders seeking to acquire funds for lending.

The prices of the longest-term issues were stabilized at slightly above par.

Table IV.—*Estimated Ownership of Federal Securities—Public Debt and Guaranteed Securities*

(Billions of dollars)

	Feb. 1946	Dec. 1947	Dec. 1948	June 1949	Dec. 1949
Total federal securities outstanding	279.8	257.0	252.9	252.8	257.2
Total held by banks	116.7	91,3	85.8	82.5	85.9
Commercial banks	93.8	68.7	62.5	63.2	67.0
Federal reserve banks	22.9	22.6	23.3	19.3	18.9
Total held by nonbank investors	163.1	165.7	167.1	170.3	171.3
Individuals	64.6	66.6	67.6	68.8	69.5
Insurance companies	24.8	24.3	21.5	20.9	54.4
Mutual savings banks	11.1	12.0	11.5	11.6	
Other corporations and associations	27.9	21.2	21.4	22.5	
State and local governments	6.7	7.3	7.9	8.2	8.0
U.S. government agencies and trust funds	28.0	34.4	37.3	38.3	39.4

Detail will not necessarily add to totals because of rounding.
Source: U.S. Department of the Treasury, Feb. 1946—June 1949; Dec. 1949 estimated by Council of Economic Advisers.

While pursuing the broad policy of stabilizing the market for government securities, treasury and federal reserve authorities adopted numerous measures designed to combat postwar inflation. Among them may be noted: (1) the substantial reduction effected in bank ownership of federal securities; (2) active promotion of the sale of savings bonds; (3) permitting interest rates to rise on short-term government securities from mid-1947 until the fall of 1948; and (4) raising by approximately $3,000,000,000 in 1948 the amount of reserves required to be held by member banks, to prevent the additional reserves created by federal reserve support purchases from becoming the basis for multiple credit expansion.

With the abatement of inflationary pressures and the moderate slackening of business activity, the federal reserve board in May, June and August 1949 reduced reserve requirements of member banks in order to make credit more freely available.

The strong bank demand that stemmed from the series of reductions in reserve requirements resulted in sharp increases in the prices of government securities. To maintain orderly conditions in the money markets, the federal reserve sold short-term securities in considerable volume; but it discontinued the practice of freely selling government bonds. This compromise policy moderated the decline in yields on short-term government securities but permitted market forces to depress sharply the yields on medium and long-term government securities, thereby encouraging investors to seek municipal and corporate securities and mortgage loans as outlets for their funds.

It was thus evident that the policy established in mid-1949 marked a new development in public-debt management. Removing the maintenance of a fixed pattern of rates on government securities from the position of primary concern gave the monetary authorities more flexibility in adapting to changing economic conditions.

Debt operations in the postwar period effected a striking redistribution in public debt ownership. (*See* Table IV.) The public debt and guaranteed securities held by banks declined from 42% of the total in Feb. 1946 to 33% in June 1949. The decline was arrested during the remainder of the year as a result of commercial bank investments of excess reserves.

The average interest rate on the public debt was 2.208% in Dec. 1949, as compared with 2.215% in Dec. 1948. In President Truman's Jan. 1950 budget message it was estimated that total payment of interest on the public debt would amount to $5,625,000,000 in fiscal 1951. This was lower than the total of $5,725,000,000 in fiscal 1950 because of a nonrecurring addition of more than $200,000,000 in the latter total occasioned by a change in reporting methods.

U.S. State and Local Government Debt.—From June 30, 1948, to June 30, 1949, the aggregate debt of state and local governments in the U.S. increased more than $2,000,000,000—from $18,702,000,000 to $20,875,000,000. (*See* Table V.)

The rise during fiscal year 1949 was mainly a reflection of increased borrowings to finance the construction of roads, schools and other public works. However, bond issues for bonu payments were again important—in Ohio, Louisiana, Nort Dakota and South Dakota—and operating costs were risin more rapidly than tax revenues.

Table V.—*Debt of State and Local Governments, U.S.*

(Millions of dollars)

June 30	Total	State	County	City and township	Scho district an speci distri
1929	17,234	2,300	2,270	9,259	3,40
1930	18,459	2,444	2,434	9,929	3,65
1931	19,534	2,666	2,564	10,458	3,84
1932	19,804	2,896	2,565	10,483	3,86
1933	19,985	3,018	2,521	10,577	3,86
1934	19,286	3,201	2,477	9,730	3,87
1935	19,429	3,331	2,433	9,778	3,88
1936	19,662	3,318	2,389	10,058	3,89
1937	19,594	3,276	2,345	10,067	3,90
1938	19,576	3,309	2,282	9,923	4,06
1939	19,996	3,343	2,219	10,215	4,21
1940	20,246	3,526	2,156	10,189	4,37
1941	20,226	3,413	2,046	10,210	4,55
1942	19,690	3,211	1,846	10,079	4,55
1943	18,692	2,909	1,634	9,784	4,36
1944	17,471	2,768	1,694	8,826	4,18
1945	16,589	2,425	1,545	8,589	4,03
1946	15,922	2,358	1,417	8,267	3,88
1947	16,825	2,978	1,481	8,275	4,09
1948	18,702	3,722	1,408	9,135	4,43
1949	20,875	4,024	1,603	9,806	5,44

Source: U.S. Department of Commerce.

The rise in state and local government debt from 1947 to 194 was in contrast to the widespread reductions effected during th war years.

Rising revenues and restricted expenditures allowed state an local governments to reduce their total gross debt from $20,246,000,000 in 1940 to $15,922,000,000 in 1946.

Other Countries.—In Table VI are presented data on th

Table VI.—*National Debt of Various Countries*

Country (Unit of currency)*	Total debt Date	(000,000's)	Total debt Date	(000,000's
Argentina (peso)	12/31/39	5,242	12/31/46	13,436
Australia (pound-Aust.)	6/30/39	1,295	6/30/47	2,767
Austria (schilling)	12/31/37	3,495		
Belgium (franc)	12/31/39	59,608	12/31/47	276,996
Bolivia (boliviano)	12/31/39	4,192	12/31/44	5,699
Brazil (cruzeiro)	12/31/39	12,535	12/31/46	37,966
Bulgaria (lev)	12/31/39	22,864	12/31/46	162,049
Canada (dollar-Canadian)	3/31/39	3,708	3/31/47	17,696
Chile (peso)	12/31/39	4,227	12/31/47	7,246
Colombia (peso)	12/31/39	182	12/31/46	437
Costa Rica (colón)	12/31/39	133	12/31/47	255
Cuba (peso)	2/28/39	229	6/30/44	180
Czechoslovakia (koruna)	12/31/39	38,449	12/31/46	108,758
Denmark (krone)	3/31/39	1,244	3/31/47	11,601
Dominican Republic (U.S. dollar)	12/31/37	18	12/31/46	21
Ecuador (sucre)	12/31/39	78	12/31/46	224
Egypt (pound-Egyptian)	4/30/39	95	4/30/47	125
Finland (markka)	12/31/39	5,636	12/31/46	104,769
France (franc)	12/31/39	482,967	12/31/47	2,499,073
Germany (reichsmark)	3/31/39	30,847	9/30/44	323,615
Greece (drachma)	3/31/39	52,138	3/31/41	52,996
Guatemala (quetzal)	12/31/39	12	12/31/46	4
Haiti (gourde)	9/30/39	52	9/30/47	50
Honduras (lempira)	6/30/39	19	6/30/47	13
Hungary (pengö)	6/30/39	1,937	12/31/43	6,501
India (rupee)	3/31/39	12,064	3/31/46	22,563
Ireland, Republic of	3/31/39	61	3/31/46	77
Italy (lira)	6/30/39	145,795‡	6/30/47	1,321,465
Japan (yen)	3/31/39	17,921	2/28/47	255,496
Mexico (peso)	12/31/39	1,500	12/31/45	1,438
Netherlands (guilder)	12/31/39	4,218	12/31/47	21,586
New Zealand (pound)	3/31/39	304	3/31/47	605
Nicaragua (córdoba)	1/31/39	8	12/31/45	10
Norway (krone)	6/30/39	1,528	6/30/46	7,005
Panamá (balboa)	12/31/39	21	12/31/47	22
Paraguay (peso)	10/31/39	3,340	12/31/47	9,990
Peru (sol)	12/31/39	833	12/31/45	1,596
Poland (zloty)	3/31/39	5,318	9/30/47	29,380
Portugal (escudo)	12/31/39	9,650	12/31/46	13,567
Rumania (leu)	3/31/39	107,716§	3/31/42	94,697
Salvador (colón)	12/31/39	38	12/31/47	38
Siam (baht)	3/31/39	73	3/31/46	166
Spain (peseta)	12/31/39	24,127	12/31/47	53,173
Sweden (krona)	6/30/39	2,634	6/30/47	11,420
Switzerland (franc)	12/31/39	3,101	12/31/46	11,476
Turkey (pound-Turkish)	5/31/39	619	9/30/46	1,847
Union of South Africa (pound-S.A.)	3/31/39	279	3/31/47	595
Union of Soviet Socialist Republics (rouble)	12/31/37	28,766‡		
United Kingdom (pound)	3/31/39	8,301	3/31/47	25,771
United States of America (dollar)	6/30/39	45,890‖	6/30/47	258,376
Uruguay (peso)	12/31/39	410	12/31/47	708
Venezuela (bolivar)	6/30/39	3	6/30/47	31

*For approximate value of various currencies see *Exchange Control and Exchange Rate*
†Not strictly comparable with the 1939 figure.
‡Domestic debt only.
§Long-term domestic debt and foreign debt.
‖Includes guaranteed securities as well as public debt outstanding.
Source: United Nations, Department of Economic Affairs.

ational debts of many countries of the world. In so far as vailable information permitted, the data are shown for 1946 or 947 and for 1939, affording a comparison of national debts beore and after World War II. In nearly all the countries for which data are provided in the table, national indebtedness was ubstantially higher in the postwar period than in 1939. During he war, debt increases were particularly large in the belligerent ountries, but sizable increases occurred in numerous nonbelligerent countries, which were required to make unusual expendiures.

(*See* also BUDGET, NATIONAL.) (C. F. Sz.)

Defense, U.S. Department of: *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

De Gasperi, Alcide: *see* GASPERI, ALCIDE DE.

De Gaulle, Charles: *see* GAULLE, CHARLES DE.

Delaware.

Delaware, on the middle Atlantic seaboard, one of the original 13 states of the United States, is called the "First state" from its having been the first to ratify he federal constitution, Dec. 7, 1787. Another popular name is he "Diamond state." Area 2,057 sq.mi. (land 1,978; inland water 79). Population (1940) 266,505, of which 139,432 were urban, 127,073 rural. Native white numbered 215,695; foreign-born 14,913; Negro 35,876. The bureau of the census 1949 estimate was 310,000. Dover (pop. 1949) 7,652 is the capital. Wilmington 126,000 (1949 est.) is the one city of more than 8,000 population.

History.—Outstanding measures enacted at the regular 1949 session of the legislature were: provision for a state-wide referendum on the question of paying an immediate cash bonus to veterans of World War II (the bonus was approved by popular vote and payments begun); increase in the salaries of state officers and judges; major revisions of the state educational system; creation of a state public utility commission; increase of state income and gasoline taxes and levy of a tax on cigarettes. Also enacted were proposals for two amendments to the state constitution: to create a separate supreme court; and to permit county zoning in New Castle county. These provisions would become part of the constitution if approved at the next succeeding regular legislative session.

The chief state officers in 1949 were: governor, Elbert N. Carvel; lieutenant governor, Alexis I. du Pont Bayard; secretary of state, Harris B. McDowell, Jr.; attorney general, Albert W. James; treasurer, Willard D. Boyce; auditor, James W. W. Baker; tax commissioner, Howard S. Abbot; bank commissioner, John C. Darby; insurance commissioner, William J. Swain; adjutant general, Paul R. Rinard; chancellor, William Watson Harrington; chief justice, Charles S. Richards; director, legislative reference bureau, Robert W. Tunnell.

Education.—Items in the revised public school program included a uniform state supported salary schedule for administrative, supervisory, teaching, nursing and clerical personnel; a unit plan for allocation of school funds; a construction program of $19,000,000 and an appropriation of $1,000,000 for delayed repairs. During the fiscal year ending June 30, the state board of vocational education placed 410 disabled persons in earning jobs.

The cost of operation of the state schools for the fiscal year was $8,312,110. Expenditures per pupil in attendance increased from $199 to $212. The 151 elementary schools had an enrolment of 27,113 and a teaching staff of 924 in June 1949. The 46 secondary schools had 16,109 pupils and 837 teachers.

Social Insurance and Assistance, Public Welfare and Related Programs.—Servicemen's readjustment allowances paid in 1949 totalled $694,216; state unemployment compensation, $2,368,625; the number of active claims in the last week of Dec. 1949 was 4,384. The cost of outside relief for the fiscal year ending June 30 was $428,051 for an average of 99 cases per month. The cost was shared half and half by the state and the county in which the relief was given. In Dec. 1949, 1,617 persons were receiving state old-age pensions compared with 1,413 in Dec. 1948.

During the fiscal year ending June 30, 854 children were cared for in their own or foster homes at a cost of $208,771; the number of dependent children aided was 1,567 at a cost of $465,301. The total state appropriation for public welfare was $2,029,748. Included were Ferris school (industrial for boys) $158,800; Woods Haven school (correctional for white girls) $50,000; Kruse school (correctional for Negro girls) $49,508. The New Castle county workhouse which accepts some long term prisoners from the other counties (there is no state prison) received 2,279 prisoners during the fiscal year and discharged 2,257. There were 354 inmates on June 30, 1949.

Communications.—Mileage of highways and rural roads (all under state control) was 3,910 at the beginning of the year 1949. Income of the state highway department for the year ending June 30, 1949, including federal aid of $1,559,036, was $8,618,095; expenditures $8,211,603; cash balance $406,492. Railroad mileage was approximately 270.

Business at the port of Wilmington increased in tonnage and value of cargoes during the calendar year 1949. For January through November tonnage was 618,140 compared with 540,133 for the whole year 1948; the value of cargoes was $33,980,633 compared with $26,626,509 for the year 1948. Tonnage through the Delaware and Chesapeake canal Jan. through Oct. 1949 was $5,240,376; transits of vessels 11,308. The four air lines maintaining scheduled passenger and freight service at the New Castle county airport reported 13,863 passengers using the airport, and the handling of 86,206 pounds of air mail and 541,761 of express and freight during the fiscal year ending June 30. The city of Wilmington had four radio stations. On Nov. 30 the state had 109,486 telephones in use.

Banking and Finance.—There were 28 state banks, mutual savings banks and trust companies, with 6 branch banks and 9 branch offices; 13 national banks, 39 building and loan associations and 22 small loan companies. Total assets of all state banks June 30, 1949, were $557,028,448 compared with $558,809,206 on the same day in 1948; deposits June 30, 1949, were $489,508,176 compared with $494,285,101 on the same day in 1948. Assets of the national banks were $41,742,597 June 30, 1949, compared with $43,340,867 on the same day in 1948.

Total state revenue for the year ending June 30, 1949, was $25,754,590.11; nonrevenue income $3,243,721.15; total $28,998,311.26. Expenditures were $33,378,901.58. The deficit of $4,380,590.32 paid out of the balance of $17,907,899.11 at the beginning of the year left a cash surplus of $13,527,308.79. The gross debt (serial bonds for permanent improvements) was $8,218,000. Total debt service (appropriation) $308,691.24.

Agriculture.—The estimated total cash income from agricultural production in 1949 was $105,000,000. Total livestock income (estimated) was $75,854,000 (including the large broiler industry for which separate data were not available). Total for crops January to October was $13,904,000, including $5,317,000 from 43,150 acres of truck crops.

Table I.—*Leading Agricultural Products of Delaware*

Crop	1949	1948	Average 1938-47
Corn, bu.	4,380,000	4,309,000	3,976,000
Apples, bu.(commercial)	624,000	382,000	714,000
Hay, tons	90,000	96,000	96,000
Wheat, bu.	1,202,000	986,000	1,289,000
Tomatoes, tons (processed)	45,000	32,000	
Strawberries, crates	63,000	47,000	
Lima beans, tons shelled	11,700	10,000	

Manufacturing.—Gross receipts of 709 licensed manufacturers for the year ending June 30, 1949, were $185,246,411, compared with $349,854,364 in the previous fiscal year. The total of employees under the unemployment compensation law July 1, 1949, was 94,937. Total wages for the year ending June 30, 1949, were $284,667,833. On Nov. 15, 1949, 559 plants in the Wilmington area reported an employment total of 56,287 compared with 62,128 for Nov. 15, 1948. New corporations chartered at Dover for the year ending June 30, 1949, were 2,333 compared with 2,686 in the preceding year. Dissolutions were 977 compared with 632 in 1948 and 442 in 1947. "Miscellaneous" manufactures in the following table include chemicals, shipbuilding, fibre, leather, textiles, foundries and machine shops—the notable industries of the Wilmington area.

Table II.—*Principal Industries of Delaware*

Industry	1949	1948
Food	$63,299,055	$52,945,704
Clothing	17,095,871	63,802,565
Household supplies	458,643	454,318
Auto supplies	6,100,656	2,464,020
Drugs and medical supplies	8,066,907	62,799
Tobacco	397,120	3,208
Miscellaneous	89,828,159	230,121,750

Mineral Production.—According to the federal census of manufactures in Delaware (1947, released 1949), the total value added by manufacture of stone, clay and glass products was $1,011,000.

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(J. EN.)

Democracy.

Lately the word democracy has been used for two opposite concepts. The more recent use of the word is exemplified in the people's democracies in eastern Europe and in eastern Asia. That kind of "democracy" is discussed in the article COMMUNISM. This article deals only with democracy based upon the multiparty representative system and upon liberty of thought and discussion in the way established in the 18th and 19th centuries.

During 1949 democracy in the western sense was consolidated and strengthened wherever it existed. All the elections held in democratic countries had made manifest the decline of communism. The growing co-operation of the democracies and the new security gained by the North Atlantic treaty (*q.v.*) had infused the democratic masses everywhere with a new feeling of confidence. This surprising vitality of democracy in the face of Communist challenge was most clearly shown in Norway, where elections were held on Oct. 10, 1949. The Communists, who were represented in the Norwegian parliament by 11 members, conducted their campaign with the slogan of peace, as used by the various Communist-inspired "peace" congresses throughout the world, and in bitter opposition to the Atlantic pact by which, they declared, Norway as an immediate neighbour of the Soviet Union was especially endangered. Nevertheless, the elections ended in an overwhelming defeat for the Communists who were unable to return even one candidate. The winner of the election was the Norwegian Labour party which counted 85 among the 150 members in the new parliament. Norway thus became the first western European country with no Communist in its parliament. The Norwegian elections also showed that in Europe a strong labour party represented one of the best bulwarks against a growth of communism. Only in countries where there was no strong Socialist Democratic party, as in Italy or France, did Communists preserve their strength in 1949, though they were losing in influence there too.

On the other hand, the elections in New Zealand on Nov. 30 and in Australia on Dec. 10 showed clearly that wherever under socialism democracy was preserved, the fundamental democratic process of alternative governments continued to function. The Labour government in New Zealand was ousted after 14 years in parliament, and that in Australia after 8 years in parliament, in favour of the conservatives who, however, were determined to maintain the social gains achieved under the preceding governments. In Britain, on the other hand, the Labour government won all the by-elections during 1949, though with smaller majorities, but was to face a general test in 1950. In Canada the Liberal party, which had been in power for 14 years, was returned with an overwhelming majority in the election of June 1949.

All other elections in Europe, wherever the elections were free with opposition parties admitted, confirmed the same trend toward strengthening democracy and defeating communism. In the cantonal elections held in France on March 20 and March 27, the middle parties, the so-called third force which represented the government, gained impressively in strength, while the Communist opposition of the left lost 147 seats, and the De Gaullist opposition of the right received only slightly more than half of the seats gained by the government parties. In the elections in Belgium at the end of June, the Christian Social party (Catholic), which emerged as the strongest without, however, receiving a majority, gained 13 seats, the Liberals gained 12 seats, while the Socialists lost 3 seats, and the Communists lost 11 seats so that they held only 12 seats among 212. Similarly, in the elections held in Austria in Oct. 1949 the communists were unable, in spite of Russian occupation of part of the country, to register any appreciable gains; the two governmental parties, the People's party and the Socialists emerged victorious from the elections. Even in soviet-controlled eastern Germany the elections held on May 15 and 16 brought a puzzling development. The election was for a "People's Congress." No opposition was allowed and the ballots contained the following statement: "I am for the unity of Germany and a just Peace Treaty. Therefore I vote for the following list of candidates." In spite of this wording stressing national unity and a just peace, the results announced by the Communist-controlled news agency, showed 7,943,949 persons voting "yes" and 4,080,272 persons voting "no." In the free elections held in August in western Germany the Communists suffered a spectacular defeat, the Christian Democratic union receiving 139 seats, the Social Democrats 131 seats, and the Communists 15 seats out of a total of 402. The fact that the western sectors of Berlin did not participate in the election probably diminished the Social Democratic vote. The Communists showed greater strength in Japan where in the elections of Jan. 1949 they sent 35 representatives to the Japanese lower chamber, but the majority went to the Democratic Liberal party whose leader Shigeru Yoshida, former ambassador to Britain, was re-elected as premier over the Social Democratic candidate, with 350 votes out of 451 cast.

Progress in the interests of democracy was made in many other fields. Race relations in the United States continued their steady improvement and Negroes were employed in growing numbers in industrial and technical positions. Even in India, where racial caste segregation in Hindu society was stronger than anywhere else, progress was made in the improvement of the position of the Untouchables, who were guaranteed complete equality in the new constitution. Only in the Union of South Africa did there appear to be no lessening in the tension between the white and the Negro population.

The greater awareness of the danger of Communist infiltration into strategic positions from within eliminated Communists from sensitive government positions and from leadership in the trade unions in the United States and in the British commonwealth. Non-communist labour organized the International Confederation of Free Trade Unions at a meeting in London on Dec. 7, 1949. This new labour international was formed in opposition to the Communist-dominated World Federation of Trade Unions which had been formed in 1945. Brussels, Belg., was selected as the permanent headquarters of the confederation. It was to be headed by an executive board which would meet every six months and which would consist of 19 delegates, 1 from Africa, 3 from Asia (1 Japanese, 1 Indian and 1 Iranian), 2 from Latin America (1 Cuban and 1 Chilean), 1 from the West Indies, 1 from Australia and New Zealand, 2 from Britain, 5 from Europe (1 each from Scandinavia, Germany, France, Benelux, and Italy respectively) and 4 from North America. The delegates, representing about 48,000,000 workers in democratic countries, asserted in their manifesto "that economic and political democracy are inseparable," and underlined their opposition to all forms of totalitarianism and dictatorship, in the Communist-controlled countries as well as under the existing regimes of Spain, Peru, Venezuela, the Dominican Republic, Nicaragua and Argentina. They advocated full support of the European Recovery program and of the unification of western Europe.

The European Recovery program and the attempts at a closer integration of the democratic countries in Europe, had strengthened democracy throughout western Europe. Efforts in that direction were also planned for the lands outside Europe. In his inaugural address to the United States people on Jan. 20, 1949, Pres. Harry Truman outlined as point 4 of his program, a "bold new program for the improvement and growth of undeveloped areas." Such a program would bring U.S. technical assistance to vast areas in Asia, the middle east, and Latin America, and thus help to raise the standard of living there and create the conditions for a secure growth of democracy. (*See* also EDUCATION; ELECTIONS; EUROPEAN UNION; GREAT BRITAIN; SOCIALISM; UNION OF SOVIET SOCIALIST REPUBLICS; UNITED STATES.)

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Democratic Party. Pres. Harry S. Truman led the Democratic party to several important victories at the polls in the off-year of 1949, but intraparty differences on Capitol Hill prevented passage of most of his "welfare state" legislation at the first session of the 81st congress.

Assuming a more aggressive leadership role as a result of his election in his own right in 1948, Truman submitted a truly formidable program in his January inaugural and subsequent messages. He also discarded the Roosevelt New Deal as a party slogan in his inaugural address, substituting for it the Truman Fair Deal. "Every segment of our population and every individual," he said, "has the right to expect from his government a fair deal."

In outlining his Fair Deal, he called for repeal of the Taft-Hartley act, civil rights legislation against discrimination of any kind, an expanded and more generous social security system, continued farm subsidies, federal financial aid for education and housing, compulsory national health insurance, greater protection of natural resources, public power development and more opportunities for small business. His proposals were regarded as more far-reaching than anything ever offered by Franklin D. Roosevelt.

He also proposed an eight-point plan for controlling inflation. He startled congress by demanding authority for the government to build industrial plants to overcome commodity shortages, if necessary. To finance these many new activities, he asked for a $4,000,000,000 tax increase.

In foreign affairs Truman urged continued American cooperation with western Europe to combat communism, which he assailed as "false doctrine." He advocated support of the United Nations, the Marshall plan and the North Atlantic treaty. In a novel approach to world difficulties, he advanced a "bold new program for improvement of under-developed areas" through U.S. public and private aid.

His proposals for extension and expansion of governmental power and activity were defeated through a combination of Republicans and conservative Democrats, mostly from southern states. He obtained only a housing construction bill and a farm measure providing for sliding and slightly lower subsidies. The minimum wage scale was raised from 40 cents to 75 cents an hour.

Truman's foreign program was enacted almost as he presented it, despite some grumbling over cost of the foreign-aid bill.

Despite this paucity of performance, the president professed satisfaction. Replying to charges that the session had rebuffed him almost as completely as the 80th congress, which he had characterized as a "do-nothing" body, he remarked that he expected more Fair Deal legislation from the 1950 session.

In Labor day addresses before factory workers at Pittsburgh, Pa., and farmers at Des Moines, Ia., he reiterated demands for action on all his original proposals. He urged a political alliance between farmers and workers as the two groups responsible for the "tremendous production of the country's economic system." Denouncing his opponents as "standpatters who want to go back to 1890," a phrase frequently used by other Democratic speakers, he declared that "with the Fair Deal we will win in 1950 and 1952."

The special election results in 1949 offered some ground for these forecasts. The Democrats won four of the five contests for house vacancies, losing only in a normally Republican district in Pennsylvania. They won mayoralty fights by sizable majorities in Boston, Mass., New York, N.Y., Pittsburgh, Pa., Cleveland, O., and Louisville, Ky.

"OUR THREE-PARTY SYSTEM IN CONGRESS," cartoon by Fitzpatrick, published in the *St. Louis Post-Dispatch* in 1949

The senatorial race in New York took on unusual significance because it was the first major test since Truman's enunciation and development of his Fair Deal philosophy. Moreover, John Foster Dulles, the Republican candidate, denounced the administration's program as "statism," while Truman made a special appeal for the election of former Gov. Herbert H. Lehman, the Democratic nominee. When the latter won by 196,293, the president interpreted the outcome as endorsement of his later record. He declared that it marked an advance in the creation of the "welfare state." The Lehman victory gave the Democrats an additional senate seat, as Dulles had occupied it by appointment of Gov. Thomas E. Dewey. For the session opening on Jan. 3, 1950, the senate line-up was 54 Democrats and 42 Republicans. In the house it was 261 Democrats, 169 Republicans, 1 American Labor party member, 1 Democratic-Liberal member and 3 vacancies.

The outcome of several ordinarily unimportant contests gave Democratic leaders considerable satisfaction. In a state-wide judicial election in New York, the Democratic entry won by 335,000, compared with Lehman's 196,293. The Democrats captured a similar post in Pennsylvania by 30,000, although the G.O.P. candidate in this normally Republican territory usually had won by 250,000 in an off-year.

The Democrats also showed strength in the cities. The Republicans placed only 1 man on the new 25-man council in New York city. For the first time in recent history, the Democrats took four municipal offices in Philadelphia.

Two political warhorses who had frequently embarrassed Democratic occupants of the White House suffered defeats that might mean the end of their careers. In a spring election Frank Hague lost control of Jersey City, N.J. When he sought a comeback in November, his candidate for governor, state Sen. Elmer H. Wene, lost to Gov. Alfred E. Driscoll, Republican.

In Boston James Michael Curley made a fifth bid for the mayoralty. He was defeated by City Clerk John B. Hynes, who had served as mayor for five months in 1945 while Curley served a prison sentence.

The Democrats were unusually active and enthusiastic during 1949, staging numerous Victory, Jefferson-Jackson day and special dinners at prices ranging from $1 to $100 a guest. As a result, they closed the year with the sum of $612,000 in the treasury. Plans were also made to raise $1,000,000 for 1950 needs through $1 subscriptions.

President Truman took obvious delight in participating in party gatherings. He marched in parades, delivered formal speeches or made surprise visits to these affairs. His partisan interest and activity naturally aroused speculation that he might seek re-election in 1952. Several prominent leaders urged his renomination, but he made no comment. After the 1948 election he said he would not run in 1952, when he would be 68.

The chairmanship of the Democratic National committee changed hands in 1949. When former Sen. J. Howard McGrath of Rhode Island resigned to become attorney general, he was succeeded by William M. Boyle, Jr., of Kansas City, Kan. A former policeman and practical politician, and a close friend of the president, Boyle stepped up activity at national headquarters at Washington, D.C., and throughout the country. Like the president's, his formula for victory was an alliance of labour, farm and other numerically strong groups whose lot, he maintained, had been bettered by Truman policies.

Democratic leadership in the senate consisted of Alben W. Barkley of Kentucky as vice-president, Sen. Scott W. Lucas of Illinois as majority leader and Sen. Francis J. Myers of Pennsylvania as majority whip. Sam Rayburn of Texas presided over the house as speaker, and Rep. John W. McCormack of Massachusetts served as majority leader, with J. Percy Priest of Tennessee as his assistant. (*See* also ELECTIONS; UNITED STATES.) (R. TU.)

Denmark. A monarchy of north-central Europe, Denmark has an area of 16,569 sq.mi.; pop. (1945 census): 4,045,232 (mid-1948 est., 4,190,000). Capital: Copenhagen (731,707, or including Frederiksberg and Gentofte 927,404; 1947 est., 976,000). Other principal cities (1945 census): Aarhus (107,393); Odense (92,436); Aalborg (60,880). Religion: Lutheran Christian. Ruler in 1949, King Frederick IX; prime minister, Hans Hedtoft.

History.—The early days of 1949 saw repeated meetings in Karlstad, Swed., Copenhagen and Oslo, Nor., at which strenuous efforts were made to bind together the countries of the north. At the Copenhagen conference, Jan. 22–24, not only ministers but leaders of all the parliamentary parties (except the Communists) from Norway, Sweden and Denmark were present. Sweden had offered to extend its defense area to include Denmark and Norway in return for a mutual defense pact. This offer was an attempt to keep Sweden's two neighbours from joining the projected North Atlantic treaty, for Sweden feared that alliance with the west would pull Scandinavia into the next war. Others thought so too, but they did not share the Swedish hope of being able to keep out. All wanted a Scandinavian pact, but Norway insisted upon the right to ally with Britain and the United States in addition. Sweden insisted that the Scandinavian group must be neutral.

Denmark stood between, and its statesmen tried valiantly to find a formula for compromise. The Danes wanted a close Scandinavian group, but they wanted arms and other support from the west. Their needs and their experience in World War II put them closer to the Norwegian position than to the Swedish. The result was that after the middle of February, when hope vanished for agreement between Sweden and Norway, the Danes had to decide whether they should become members of the Atlantic system or stand alone.

PUBLIC CELEBRATION before the parliament building in Copenhagen, June 5, 1949, marking the 100th anniversary of the signing of Denmark's first act of constitution under Frederick VII

The United States was blamed for splitting the north, because the United States government had let it be known that it could not guarantee priorities in arms deliveries to countries, however friendly, who stood outside the commitments of the Atlantic pact.

Denmark, once it was clear that the Scandinavian states could not agree and that Norway intended to join the west, soon determined to affiliate with the North Atlantic alliance. Foreign Minister Gustav Rasmussen journeyed to Washington, D.C., in March, and flew back to Copenhagen to advise Danish acceptance of the treaty. The U.S. was particularly eager to have Denmark in the group because of the importance of Greenland's airfields and weather stations. (*See* also GREENLAND.) On March 24 and 25 the two houses of the Danish *rigsdag* voted 119–23 and 64–8 to accept and to ratify the terms of the alliance, and Rasmussen signed in Washington in the general ceremonies of April 4. In the early morning hours of that day a soviet note of protest was delivered to the Danish foreign office, but it had no more effect in Copenhagen than did a similar move in Oslo.

Denmark was on the receiving end of considerable aid from the European Cooperation administration, and continued to use that aid effectively to expand its production and export. A significant and much appreciated sign of improving times was the abandonment of rationing on many items: soap, tea and cocoa on Sept. 1; meat on Nov. 19. This indicated an easing of the *valuta* problem. Danes studied the U.S. market and found purchasers for an increased quantity of goods, such as a shipment of 2,000 cases of premium hams sent in the autumn—a direct result of Marshall plan grain sent to Denmark. Special exhibits of porcelain attracted buyers in U.S. cities.

In the general devaluation of currencies in September, Denmark had no choice but to follow Britain, its most important customer, in the 30.5% cut in relation to the dollar. Prices of Danish goods in the U.S. market were lowered appreciably, but it remained to be seen whether the new values would stimulate enough new trade to overbalance the loss in price. On May 5 Foreign Minister Rasmussen signed in London the agreement on the Council of Europe. Denmark joined with the countries of western Europe in a series of tariff reductions, and continued to urge a Scandinavian customs union. On this problem the Scandinavian commission and public debate laboured throughout the year; in November the foreign ministers of Denmark, Norway and Sweden told U.S. Ambassador W. Averell Harriman that they intended to take prompt action on customs union, but positive achievement was still not quite attained.

Considerable publicity in both Denmark and the United States attended the appointment to the Copenhagen post of the United States' first woman ambassador, Mrs. Eugenie Anderson (*q.v.*) of Minnesota. In prewar years Denmark had also received the first woman minister of the U.S., Mrs. Ruth Bryan Owen.

Denmark's deep concern about the crowding of east German refugees into the provinces just south of the Danish border was somewhat assuaged late in the year. In September the Schleswig-Holstein *landdag* ratified an agreement guaranteeing minority rights to the Danish-minded citizens of the province. Denmark's Scandinavian neighbours had joined Denmark in demanding easing of the tensions on the German border, and action was obtained when the West German government at Bonn (Nov. 10) passed a law providing for the resettlement of 150,000 of the east German refugees who had crowded into certain small areas, particularly Schleswig-Holstein. About 300,000 had migrated there, and the two provinces experienced a 73% increase in population in the decade 1939–1949, compared with a 20% increase for west Germany as a whole.

The last of the 210,000 German refugees who had fled into Denmark itself were removed into western Germany in February. A minor problem remained of what to do with about 2,000 Allied refugees, but that too was partly solved with the departure of 150 for Canada and 569 for Australia. But between 1,000 and 1,500 of the ill and the aged were likely to remain in Denmark.

The Social Democratic government survived the autumn attack on its economic policies. Most of the liberals abstained in the vote of confidence on the administration, and thus a new election was avoided. Evidently it was realized that even after an election no party would have a clear majority, and therefore a series of compromises was agreed upon.

Finance.—The monetary unit, the krone, was pegged at 20.84 U.S. cents until Sept. 18, and thereafter was worth 14.48 U.S. cents. Revenues, April 1, 1948, to March 31, 1949, totalled 2,248,000,000 Kr.; the estimate for 1950–51 was 2,066,000,000 Kr. Expenditures, April 1, 1948, to March 31, 1949, amounted to 2,148,000,000 Kr.; the estimate for 1950–51 was 2,057,000,000 Kr. The national debt was reduced in the fiscal year 1948–49 by 243,000,000 Kr., and an additional 175,000,000 Kr. was paid to the special account for liquidation of German occupation expenses. Notes in circulation, Aug. 1949, totalled 1,432,000,000 Kr., compared with 1,428,000,000 Kr. in Aug. 1948.

In the devaluation Denmark lost 375,000,000 Kr. on debts contracted in dollars or Swiss francs; the loss was to be written off over a ten-year period.

Trade and Communications.—During the first eight months of 1949 imports were about 740,000,000 Kr. above those of the same period in 1948, and exports were about 425,000,000 Kr. higher. Butter, eggs and bacon were considerably larger in quantity of export, but prices were down. In September prices turned upward slightly.

Unemployment as of Aug. 1949 amounted to 2.2%, compared with 1.5% in Aug. 1948. The industrial employment index was up three points over Aug. 1948, and the output up five points.

Denmark's exports in 1948 totalled $550,000,000 (1947: $480,000,000). Imports in 1948 totalled $668,000,000 (1947: $548,000,000).

Of the exports in 1948 the United Kingdom bought $169,000,000 and the United States $29,000,000 (chiefly for use in occupied Germany). Of the imports the United Kingdom furnished $181,000,000 and the United States $99,000,000.

Agriculture.—A livestock census of March 1949 showed favourable increases over the years immediately after the war, though numbers were not back to prewar levels: poultry numbered 18,000,000; pigs 2,200,000; milk cows 1,600,000.

Agricultural Production in Denmark

(In millions of pounds)

	1948	1947	1939
Milk	8,963	9,033	11,500
Butter	266	275	403
Bacon	376	447	725
Eggs	191	136	295
Meat	248	431	367

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(F. D. S.)

Dentistry.

An experiment in the training of auxiliary personnel for the care of children's teeth was started and supported in 1949 by the children's bureau of the Federal Security agency, sponsored by the Massachusetts state department of health, and conducted by members and staff at the Forsythe Dental Infirmary for Children in Boston. A group of young women was carefully selected for a two-year course of training in dental hygiene plus intensive courses in the techniques of filling simple cavities in the teeth of children. After completion of the formal training, these young women were to work in the clinic for three years, their chief duty being the filling of decayed teeth in children.

The Good Teeth Council for Children, Inc., continued active in bringing dental health education to children in all parts of the country through puppet shows and booklets carefully prepared for various ages. The Council on Dental Health of the American Dental association sponsored a National Children's Dental Health day. Dental societies in most of the states developed dental health education programs of interest to parents, teachers and dentists, all centring on the child. This was so successful that a bill was introduced in congress authorizing the president to proclaim annually a day set apart as a National Children's Dental Health day.

During 1949 the U.S. public was bombarded with advertisements by tooth powder manufacturers implying that dental decay might be wiped out by use of ammonium ion toothpaste. The evidence, however, was still incomplete as to the effectiveness in terms of percentage of ammonium ion toothpaste preparations.

Meanwhile the use of sodium fluoride, especially by topical application, was extended. The United States public health service, through funds appropriated by the congress, sent out demonstration teams to provide information on the approved application technique to dentists, health officers, civilian leaders and the public; and to show how community fluoride programs operate.

Evaluation of results as reported by the United States public health service indicated that "A minimum of 4 applications of a 2% sodium fluoride solution, preceded by a dental prophylaxis, is required to obtain a maximum of 40% reduction in the incidence of dental caries." (John W. Knutson, "Evaluation of the Use of Fluorine as a Caries Control Measure: The Effect of Topically Applied Fluorides," *J. Am. Dent. A.*, Feb. 1949.)

There was considerable interest in the role played by fluorine and other trace elements in the body chemistry, especially in the field of nutrition. It was suggested that where no fluorine is present in the drinking water, it might be added to the diet.

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Films of 1949.—*Save Those Teeth* (Encyclopædia Britannica Films Inc.).

(L. M. S. M.)

Dermatology. Aureomycin continued to exhibit remarkable versatility as an antibiotic. Studies indicated that it exerts bacteriostatic or bactericidal activity against a wide range of both gram-negative and gram-positive bacteria, including penicillin-resistant and streptomycin-resistant organisms. It was proved highly effective against most strains of *Rickettsia,* as well as viruses of psittacosis and lymphogranuloma venereum.

In most of the groups of cases of rickettsial infections reported, the outstanding feature was the uniformity with which the fever and symptoms subsided in relation to the treatment, irrespective of the time when treatment was begun. Where similar cases treated symptomatically were available for comparison, a considerable reduction of the period of acute symptoms, fever and rash, and a decided shortening of the convalescent period was noted in the aureomycin-treated cases. There were no complications and no deaths in these cases.

Clinical improvements in symptoms of the acute illness usually occurred within 24 hr. after oral therapy with aureomycin was started. The temperature returned to normal, either during or before the third day of treatment and the rash in the cases of typhus or spotted fever usually faded at about this time.

Experience with the use of aureomycin in the treatment of lymphogranuloma venereum indicated a definite effect in the acute cases and some benefit, particularly as an adjunct to surgical and other measures, in the management of chronic cases. Some of the chronic cases relapsed after cessation of treatment. Possibly better and more lasting results could be obtained with larger doses given by mouth and maintained over longer periods.

A number of cases of pyoderma of various types, some in newborn infants and in patients with other severe systemic disease, showed improvement in varying degrees and for varying periods under treatment with aureomycin after failure to obtain benefit from penicillin and streptomycin. Many of the lesions yielded penicillin and streptomycin-resistant staphylococci. In some cases of herpes zoster in which treatment was undertaken early the lesions failed to progress, the pain subsided, new lesions failed to appear and old lesions began to dry up and healed promptly after treatment with oral aureomycin was instituted. This antibiotic drug proved particularly useful in cases with ophthalmic distribution of the lesions. Relapses in herpes zoster occurred with new lesions reappearing after treatment was discontinued prematurely, but aureomycin was again given with benefit in some of these cases.

There were 100 unselected patients with scabies treated with a new preparation of the gamma isomer of hexachlorocyclohexane in a vanishing cream base, with 100% cures reported by A. B. Cannon and M. E. McRae. Complete relief from pruritus within 24 to 48 hr. was reported by about half the patients, and many observed that itching ceased within two to three hours. Pronounced clinical improvement was seen in all cases after one application. Of those under observation, 61, or nearly two-thirds, showed no signs of activity after a single treatment. Thirty-six were given two treatments and three patients received three. All were cured, and in no case could the acarus be demonstrated after the first application of the cream. This remedy was found to be effective in cases in which other preparations had failed. No cases of irritation or sensitivity occurred, either as primary or late manifestations, and there were no contraindications even in the presence of severe secondary dermatitis. This preparation was also successful in the treatment of all types of pediculosis.

Increased use of beryllium in industry brought to light several new pathologic reactions among workers handling it, and the product was added to the ever expanding group of serious industrial intoxicants. In the beryllium refining industry, cases of acute dermatitis occurred from contact with the soluble salts. Crystals imbedded under the skin had produced foreign body reactions with ulceration. Extensively proliferating granulomas necessitating wide excisions developed following cuts from glass fragments in which particles of beryllium phosphor remained.

Bacitracin, another antibiotic drug, was used with success in some superficial pyogenic diseases of the skin. J. L. Miller, M. H. Slatkin and B. A. Johnson found it effective in impetigo contagiosa, folliculitis, infectious eczematoid dermatitis, ecthyma and dermatitis repens, but only of limited value in sycosis vulgaris. Their results were best with bacitracin in a concentration of 500 units per gram and an oil and water or greaseless carbowax base.

Excellent results were reported by W. E. Wooldridge and H. L. Joseph in the treatment of circumscribed and disseminated neurodermatitis and other itching dermatoses by the local application of phenindamine (thephorin) ointment. In the cases that responded to this drug, improvement in the eruption was noted in a week and once improvement became evident, it was progressive and usually reached a peak within four weeks. Even though no more improvement occurred in most patients after that time, they could be maintained in an improved condition.

Since the advent of streptomycin and the determination of the effectiveness of this drug in the treatment of granuloma inguinale, many trial dosage schedules had been used to attempt to standardize a regimen of therapy. M. H. Samitz, P. N. Horvath, P. P. Mari and H. Berman reported 19 cases of chronic granuloma inguinale treated with a uniform total dosage of 20 grams of streptomycin administered in fractions of 0.5 grams every three hours for five days. All patients responded with rapid healing and there were no recurrences during an observation period of 6 to 15 months. (*See* also MEDICINE.)

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FILMS OF 1949.—*Care of the Skin* (Encyclopædia Britannica Films Inc.).

(H. Fx.)

Detroit. Centre of the southeastern Michigan industrial area, the city of Detroit and its surrounding communities accounted in 1949 for an estimated 13% of U.S. manufacture and consumed 10% of the nation's steel.

The 137.9 sq.mi. of Detroit proper held an estimated 1,785,000 population in 1949, compared with 1,623,452 by the 1940 census count, when it stood fourth among United States cities.

Despite shrinkage from the wartime population peak, housing shortages persisted in the rental categories, and 11 public housing projects were tentatively planned. Estimates placed owner occupancy of single dwellings between 70% and 75%, as against 38% in 1940.

As of June 30, 1949, close of the fiscal year, the assessed value was $3,979,780,680; gross bonded debt (notes included), $310,316,805; net bonded debt (notes included), $280,489,878; net tax supported debt, $190,937,020; gross appropriation (including school, library and utilities), $272,033,671; tax levy (including school and library), $114,959,137; tax rate (including school and library), $30.69.

Employment remained at a generally high level.

The outstanding labour relations event of the year was the entry of the Ford Motor Co. and the United Automobile Workers into a contract providing worker pensions wholly financed by the company. It stipulated that the employer would pay pensions which, added to the retired employee's social security, would give the recipient a $100 monthly income.

The outstanding civic accomplishment was a fund-raising campaign innovated to embrace all welfare and health agencies obtaining support from public subscriptions. Conducted by the United foundation, it sought support for 143 organizations and surpassed its goal of $8,550,000. The single campaign principle drew strong support from business managements and unions.

Incumbent Mayor Eugene I. Van Antwerp was defeated for nomination in the nonpartisan primary when City Treasurer Albert E. Cobo led the ticket, with Council President George Edwards second. Cobo was chosen mayor at the general election. A charter amendment to extend the terms of mayor, treasurer and city clerk from two to four years was narrowly defeated.

The principal problem to confront the municipal government during the year was the financial disability of the city-owned Detroit street railway. Despite higher fares and service curtailments, revenues fell short of operating costs.

A major municipal controversy turned on welfare policies. Laxness in granting aid was charged, and procedural changes were instituted.

The Detroit Symphony orchestra was disbanded during the year for lack of adequate financial underwriting.

The city was free of major disasters and disturbances, though crimes of violence in certain classes followed an upward trend, which was nationally noted. (R. Ho.)

Devaluation: *see* Exchange Control and Exchange Rates.

Diabetes. The first international conference of Diabetes associations was held in Brussels, Belg., June 9, 1949, under the leadership of J. P. Hoet of Louvain, Belg. Papers were read upon heredity, social relationships, the diabetes detection drive in the United States, life insurance and the employment of diabetics in government and private agencies. Representatives were present from 12 or more countries.

The American Diabetes association expanded its efforts during 1949, concentrating upon a diabetes detection drive for the second year. The drive claimed much attention in the press, radio and before medical bodies; industrial organizations participated more freely than formerly. There were now 20 affiliate societies of the American Diabetes association in the United States and Canada. Many of these had two sections, one for physicians and the other for the lay public. Headquarters for the American Diabetes association in 1949 were at 1 Nevins St., Brooklyn, N.Y.

The diabetes branch of the United States public health service conducted large scale demonstration activities in co-operation with local medical societies and health departments in Brookline, Mass. and Jacksonville, Fla. and began similar surveys in Milwaukee, Wis. and Dallas, Tex. The Oxford, Mass., and Jacksonville surveys were not entirely comparable, but for new cases were not significantly different—1% and 0.9% respectively. To facilitate detection of probable diabetics the Wilkerson Heftmann Blood Sugar Five Minute Screening test was devised; with this and the Hewson clinitron, more than 100 blood sugar tests could be performed hourly. The reagents can be adjusted to a fixed screening level above which the results are positive. Headquarters for the diabetes branch of the U.S. public health service in 1949 were at 639 Huntington Ave., Boston 15, Mass.

The number of diabetes homes and camps for children continued to grow. In the summer of 1949 there were 11 such camps in the United States and Canada listed in the *ADA Forecast*. In England many diabetic children with unsatisfactory home surroundings were placed in various publicly and privately supported homes for year-round treatment and education. Facilities of the Clara Barton Birthplace camp in North Oxford, Mass., were extended to older girls.

Increasing Duration of Life

(Average duration from onset to death in successive eras of treatment—10,673 fatal cases)

Age at onset (Years)	Naunyn era 1897–1914	Allen era 1912–22	Banting era 1922–29	Banting era 1930–36	Hagedorn era 1937–43	C. H. Best era 1944–49
All ages . . .	4.9	6.1	8.0	10.4	12.5	14.4
Under 10. . .	1.3	2.9	2.8	7.3	10.3	18.3
10–19	2.7	2.7	3.4	7.5	11.5	15.6
20–39	4.3	4.9	8.9	14.4	16.9	18.7
40–59	7.0	8.0	9.5	11.7	13.8	15.6
60 and over. .	4.4	6.4	5.5	7.1	8.8	9.4

The steadily increasing duration of life of diabetics was shown in a compilation of fatal cases by the George F. Baker Clinic, financed by the Life Insurance Medical Research fund and the Metropolitan Life Insurance company. Beginning about 1900 steady progress was noted for each age group of patients. Those with onset between 10 and 19 years had the shortest duration, if one allows for a normal lessening expectancy due to age; evidently adolescents were the most difficult to control. The percentage of fatal cases surviving 20 years of diabetes in 1949 was 24.1 for all diabetics in contrast to 1.8 between 1897 and 1914. A hopeful sign was the fall in morbidity and mortality of diabetic coma, once the scourge of the diabetic. It reached its lowest level, 1.9% among 2,299 cases discharged from one clinic and dying later in various parts of the world. No deaths occurred in 92 successive coma cases in one hospital, none for two and a half years in another large hospital and only one in two years among cases in a third institution.

The sombre view regarding the later life of the diabetic child was emphasized by G. Fanconi of Zurich, Switz., reporting 136 cases in which none of the 87 traced lived more than 21 years. This was in contrast to the experience of the George F. Baker Clinic, in which 24% of 2,145 living patients with onset under 15 years had already reached 25 years of age and 12% had survived the disease 25 years and smaller groups 30 and even 35 years.

The importance of duration of the diabetes in the development of arteriosclerosis became evident in Howard F. Root's study of 202 diabetics with onset between the ages of 15 and 30, although it was shown that control of the disease was also a major factor. High blood pressure rose from 2% to 33%, calcified arteries from 21% to 88%, retinitis from 4% to 60% and proteinuria from 3% to 10%, as the average length of the disease advanced from the first to the third 10-year period.

Continuing research emphasized the experimental work dealing with adrenocorticotropic hormone (ACTH) and its diabetogenic action as well as the protective action of glutathione even in humans. Jerome W. Conn found in his experimental subjects, temporarily diabetic by injections of adrenocorticotropic hormone, that the hyperglycaemia fell to normal by intravenous injections of glutathione. Moreover, in a patient with Cushing's syndrome with pituitary diabetes of long standing, the intravenous injection of glutathione brought about immediately a fall to normal of the blood sugar, although of short duration. A hint of the connection of carbohydrate and purin metabolism was evidenced in patients with gout by the production of typical attacks by an injection of ACTH. Other observations pointed to the close relation of carbohydrate and protein in the promotion of synthesis of muscle protein from amino acids in the blood.

Inactivation of insulin in the organism was shown by I. Arthur Mirsky, utilizing a method by which insulin was detected in the urine. He concluded that even when the organism is overwhelmed with insulin, only a small amount (1%) will be excreted. Diabetics had less insulin in the urine than normals.

De Witt Stetten and coworkers showed that alloxan diabetic animals produce only 5% as much fatty acid synthesis from carbohydrates as normals. Insulin corrected this. S. S. Kety and associates found that although large amounts of blood go through the brain in diabetic coma, the oxygen consumption is 40% below normal. (*See* also Endocrinology; Eye, Diseases of; Public Health Services.)

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(E. P. Jo.)

Diamonds.

The output of diamonds of the major producing countries and the estimated world totals during the past several years are shown in Table I, as reported by the U.S. bureau of mines.

Table I.—*World Production of Diamonds*

(Thousands of carats)

	1942	1943	1944	1945	1946	1947	1948
Angola	792	795	799	804	808*	799	796
Belgian Congo .	6,018	4,881	7,533	10,386	6,033	5,474	5,825
French Africa .	96	92	130	163	139	180	178
Gold Coast . .	1,056	1,317	1,166	812	653	852	850*
Sierra Leone .	1,046	834	609	504	559	606	466
South Africa . .	119	302	934	1,141	1,282	1,205	1,200*
S.W. Africa . .	56	94	154	153	164	179	201
Tanganyika . .	40	53	91	116	119*	92	148
Brazil	300*	275*	301*	275*	325*	275*	250*
Others	63	48*	48*	30*	45*	90*	115*
Total	9,587	8,694	11,764	14,384	10,127	9,742	10,028

*Estimated.

United States Imports.—For many years the United States has been the foremost buyer of gem diamonds, and since 1938 the weight of industrial diamonds imported has been greater than that of the gem stones, though their value was far less. Imports of the various types are shown in Table II.

Table II.—*U.S. Diamond Imports*

(Carats)

	Rough	Cut	Industrial	Total
1939	153,982	488,154	3,570,111	4,212,247
1940	227,886	321,471	3,809,856	4,359,213
1941	215,026	229,582	6,882,750	7,327,358
1942	278,437	126,004	11,204,754	11,609,195
1943	751,674	193,701	12,173,918	13,119,293
1944	896,547	169,097	12,656,823	13,722,467
1945	893,761	377,243	10,792,186	12,063,190
1946	1,044,517	604,638	4,705,118	6,354,273
1947	996,514	347,810	4,038,082	5,382,406
1948	912,762	389,314	10,418,316	11,720,392

The values assigned to the imports reported in 1948 were: rough stones, $44,460,365; cut stones, $56,244,934; industrial stones $32,521,501, besides a small amount of diamond dust and manufacturers' bort; total value $133,226,800, as compared with $109,689,729 in 1948.

The extent to which the United States has absorbed the world's diamond supply in recent years is emphasized by a comparison of the production and import figures shown above. Imports since 1942 total 73,972,000 carats, as compared with a world output of 74,326,000 carats in the same years.

(G. A. Ro.)

Dietetics: *see* Nutrition, Experimental.

Diomedes, Alexander

(1875–), Greek economist and politician, was born at Athens. He was a friend of Eleutherios Venizelos whose Liberal government he joined as minister of finance (1912–14). After World War I he retired from politics and in 1923 was elected governor of the National bank, at that time still the bank of issue. In this capacity he negotiated the refugee loan of 1924 and the stabilization and public works loan of 1928, besides conducting negotiations which led to the creation of the Bank of Greece as the bank of issue (1928). Retiring from public life in 1930 he studied the economics of the Byzantine empire and in 1943 published a two-volume work on the land policy of the Macedonian and Comnene emperors. Before World War II he was honorary president of the Supreme Economic council and from 1945 president of the Supreme Reconstruction board, and chairman of the board of the National bank. On Jan. 20, 1949, he joined the coalition government of Themistocles Sophoulis as a nonparty deputy premier, and after Sophoulis's death he succeeded him on June 30 as prime minister of a Populist-Liberal coalition cabinet. He resigned on Jan. 5, 1950.

Diplomatic Services: *see* Ambassadors and Envoys.

Disabled American Veterans: *see* Veterans' Organizations.

Disasters.

During 1949 loss of life and property in disasters included the following:

Aviation

Jan. 2	Seattle, Wash. Fourteen persons, including 11 Yale students, died in the take-off crash of a chartered plane enroute to New Haven, Conn.
Jan. 17	Argyllshire, Scotland. A U.S. B-29 bomber carrying 20 U.S. air force personnel crashed, killing all aboard.
Jan. 27	Near the Canary Islands. A U.S. B-29 bomber disappeared while flying from Dakar, French West Africa, to Marham, England, and the 15 fliers aboard were given up for lost.
Feb. 8	Oresund, off the Swedish coast. Twenty-eight persons aboard a Scandinavian air liner lost their lives when their plane crashed into the water.
Feb. 24	Hong Kong. Nineteen passengers and 4 crewmen of a Cathay Pacific Airways plane were killed when the plane crashed and burned in a fog.
March 1	Northern Luzon. A U.S. B-29 tanker plane, one of those that refuelled the plane "Lucky Lady II" on its nonstop flight around the world, crashed on a mountain peak 25 mi. northeast of Manila. Of its crew of nine, five bodies were recovered.
May 4	Turin, Italy. Thirty-one persons, including 18 members of Turin's championship soccer team, died when a tri-motored Italian air liner struck Superga hill and fell in the courtyard of the Superga cathedral.
June 7	Near San Juan, Puerto Rico. Fifty-three persons lost their lives when a twin-engined transport plane carrying 81 persons crashed in Puerto Rican coastal waters.
July 12	Near Bombay, India. Forty-five persons, including 13 well-known U.S. newspapermen, were killed when a Dutch transport plane crashed.
July 12	Near Chatsworth, Calif. Thirty-six persons died in the crash of an unscheduled commercial plane after the pilot had radioed that a fist fight had occurred between two passengers. It was later established that the fight presumably did not cause the crash, which was laid to poor visibility.
July 30	Near Fort Dix, N.J. Twelve passengers and a crew of three aboard an air liner, and the pilot of a navy fighter plane, died when the two craft collided.
Aug. 19	Yorkshire, England. Twenty-four persons died when a British air liner approaching Manchester from Belfast crashed into a peak; within a few miles, another four persons were killed when a new civilian plane lost a wing and crashed in a cornfield.
Aug. 21	Northern Manitoba, Canada. A twin-engined plane crashed about midway between Churchill and Winnipeg bringing death to 21 persons aboard, including 7 R.C.A.F. crewmen, 8 Eskimos suffering from poliomyelitis, a Canadian press reporter, a woman physiotherapist and 4 weather observers.
Sept. 9	Near St. Joachim, Que., Canada. Twenty-three persons aboard a Quebec Airways plane were killed when the craft crashed and burned on a mountainside. It was later reported that explosives had been placed aboard the plane, and a Quebec woman and a man, whose wife was aboard the plane, were held.
Sept. 26	Near Mexico City, Mexico. Twenty-five persons, all those aboard, were killed in the crash of a Mexican air liner on Popocatepetl volcano.
Oct. 28	The Azores. An Air France Constellation plane, en route from Paris to New York, crashed in flames into a mountain, killing all 48 persons aboard.
Nov. 1	Washington, D.C. The worst civil aviation disaster in U.S. history occurred when 55 men, women and children in an Eastern Airlines Douglas plane died after the air liner was rammed by a P-38 fighter plane being testflown by a Bolivian pilot, who survived.
Nov. 3	Off Hamilton, Bermuda. Eleven of the 13 men aboard a B-29 died when the plane, returning from a routine weather flight, crashed into the sea. It had attempted to land because of one disabled engine but was unable to do so because another plane blocked the runway.
Nov. 16	Stockton, Calif. Two B-29 planes on a mass training flight collided 27,000 ft. above this city, with the resulting deaths of 18 of the 21 crew members of the two craft.
Nov. 20	Near Oslo, Norway. Thirty-four persons were killed, among them 27 children, mostly orphans travelling from Tunisia to a rehabilitation centre in Norway, when the plane bearing them crashed; the sole survivor was a 12-yr.-old boy.
Nov. 29	Dallas, Tex. Twenty-eight of 46 passengers aboard a DC-6 air liner died when the plane, which had encountered engine trouble, crashed into a hangar at the airport and burned.
Dec. 1	Near Jacarèzinho, Brazil. Seventeen passengers and four crew members died when a Brazilian transport plane crashed into a mountainside.

CANADIAN PLEASURE CRUISER, the S.S. "Noronic," ablaze at its Lake Ontario pier in Toronto, Ont., Sept. 17, 1949. Of the 512 passengers, most of them U.S. citizens, and 170 crewmen, 120 lost their lives

Dec. 16 Veracruz state, north of Jalapa, Mexico. An air liner crashed in a fog and burned, carrying its 17 passengers and crewmen to death.

Dec. 22 Near Savannah, Ga. All 11 aboard died when a flaming air force B-50 bomber plunged into a rice paddy.

Fires and Explosions

Jan. 28 Chicago, Ill. Nearly 100 persons were injured in the explosion of a gas-mixing plant.

Feb. 27 Gambier, O. Nine students died in a fire that destroyed a dormitory of Kenyon college; 24 others were injured and property loss was estimated at $1,000,000.

March 30 Nadachi, Japan. Fifty-seven Japanese were killed and 16 were injured when a wartime mine drifted ashore and exploded; 40 houses were demolished.

April 5 Effingham, Ill. Sixty-six persons, including 13 infants, were killed when fire blazed swiftly through St. Anthony's hospital, in the second-most tragic hospital fire in U.S. history.

May 13 New York, N.Y. At least 66 persons were injured following an explosion of carbon disulphide aboard a truck in the Holland tunnel under the Hudson river; a 300-ft. section of the tunnel was damaged and 23 trucks were damaged or destroyed by the explosion and resulting fire.

July 21 Canton, China. One hundred twenty persons were reported killed or injured in the explosion of a Nationalist ammunition dump; officials of the arsenal were held on suspicion of setting off the blast to cover up black market dealings in munitions.

July 26 Tarancon, Spain. At least 33 persons were killed and 105 were injured in the explosion of a military arsenal.

Aug. 5 Big Belt mountains near Helena, Mont. Thirteen men, including 12 "smoke jumpers," specially trained parachute forest-fire fighters, were killed fighting a forest fire.

Aug. 20–22 Gironde department, France. More than 80 persons died in fires that burned about 125,000 ac. of woodland; the fatalities included 60 firefighters among which were 20 soldiers.

Sept. 2–3 Chungking, China. At least 1,700 persons were killed, 100,000 were left homeless and more than 10,000 buildings were destroyed or seriously damaged in an 18-hr. fire.

Nov. 6 Near Zwickau, Germany. An explosion in a soviet zone uranium mine killed 70 German miners, according to a report published on this date by the western zone newspaper *Sozialdemokrat*. Later, however, a fire brigade officer who escaped to the western zone claimed that the disaster had killed about 3,700 miners.

Dec. 14 Sioux City, Ia. Nineteen persons were killed and about 150 others were injured in an explosion, attributed to an accumulation of natural gas, that blasted a packing plant.

Dec. 24–26 United States. Sixty-four persons died in fires during the Christmas holidays.

Marine

Jan. 19 Off the New Jersey coast. Ten crewmen of the U.S. coast guard icebreaker "Eastwind" were killed and 18 others were injured in a collision between the vessel and a tanker.

Jan. 28 Southeast of Shanghai. More than 600 Chinese were missing and presumed dead after a collier and a freight and passenger liner, carrying war refugees, collided and sank.

May 20 East Bengal, Pakistan. About 100 persons were drowned when a ferryboat struck a sandbar and capsized.

July 9 Istanbul harbour, Turkey. At least 56 persons died when exploding chemicals caused a fire aboard a passenger steamer.

July 26 Near Indore, India. One hundred and forty Hindus returning from a pilgrimage were drowned when a ferryboat capsized in the Narbada river.

Aug. 26 Arctic waters near Norway. Seven persons perished when the U.S. submarine "Cochino" exploded, burned and sank; while 77 of the submarine's personnel were saved, one civilian technician attached to the vessel was killed in the explosion and an officer and five enlisted men from the sister craft "Tusk" were swept overboard and lost during rescue operations.

Sept. 17 Toronto, Canada. A total of 120 persons lost their lives when fire destroyed the Great Lakes passenger steamer "Noronic" at its berth.

Sept. 22 Magellan Straits. Seventy-seven Argentine navy officers and men perished aboard the mine sweeper "Fournier" when the ship struck a submerged rock and sank while en route to Ushuaia, Tierra del Fuego territory.

Oct. 18 Off Berwick, England. Twenty British seamen perished aboard the freighter "Maystone" when it sank during a gale after colliding with the unfinished aircraft carrier "Albion," an 18,300-ton ship, which was being towed by tugs to the drydock at Rosyth, Scotland, for completion.

Dec. 5 Off Korea. A typhoon that swept the east coast of Korea dispersed a vast fishing fleet and brought death to the crews of more than 130 boats, totalling several thousand men.

Dec. 10 Between Pu Toi or Tain Kun islands, south of Hong Kong. More than 60 Chinese passengers lost their lives when a motorship broke up in heavy seas.

Dec. 13 Off the coast of Spain in the western Mediterranean. More than 80 persons were reported dead in the sinking of four fishing boats during a storm.

Miscellaneous

Feb. 12 Quito, Ecuador. A radio dramatization of H. G. Wells's *War of the Worlds* so terrified radio listeners that a mob attacked and burned the building housing the radio station and the city's leading newspaper. Twenty persons were killed in the rioting; property damage was estimated at $350,000.

July 14 Saigon, Indo-China. Twelve persons were reported killed and 118 wounded in a riot during Bastille day celebrations.

Sept. 8 Seoul, Korea. Deaths in an encephalitis epidemic reached 206, with a total of 699 cases reported since Aug. 24.

Sept. 16 Southern Korea. Revelation was made of the deaths of at least 95 prisoners who participated in a mass jailbreak, while at the same time it was disclosed that at least 5 guards also were killed. Of 430 convicts who escaped, 275 still were at large.

Oct. 22 Cali, Colombia. Twenty persons were killed and another 40 were injured when a mob stormed a political meeting.

Nov. 22 Near Mandalay, Burma. Thirty passengers aboard an Irrawaddy river ferry were killed when rebels attacked the vessel.

Dec. 1 Burma. Clashes between government and rebel forces accounted for the deaths of an estimated 360 persons.

Dec. 14 Cocuy, Boyacá department, Colombia. A raid by persons described by the government as "bandits" caused the deaths of 82 persons.

Dec. 15 Sulu province. Republic of the Philippines. Moro rebels ambushed a constabulary combat unit and killed 71 officers and men.

Natural

Jan. 3	Louisiana and Arkansas. Fifty-nine persons were killed and more than 250 were injured as tornadoes lashed a dozen communities; 54 of the fatalities occurred in Warren, Ark.
Jan. 5	Shanghai, China. A total of 4,727 persons, of whom 3,879 were children, were reported dead of cold and hunger in Shanghai during the preceding month.
Jan. 22	West central United States. Repeated blizzards caused death of thousands of cattle and sheep, with losses to stockmen amounting to millions of dollars.
Feb. 20	Praia, Cape Verde Islands. At least 232 persons, lined up for government famine relief, were crushed to death and 50 others were injured when a wall collapsed on them.
March 24–26	Midwestern U.S.A. Tornadoes left 28 persons dead in Oklahoma, Texas, Tennessee, Kentucky, Mississippi and Arkansas.
April 13	Northwestern U.S.A. Eight persons died in earthquakes that rocked the Pacific northwest, causing damage estimated at $25,000,000.
April 20	Central Chile. Fifty-seven persons were reported killed and 89 injured when an earthquake, which caused damage estimated in the millions of dollars, shook several cities.
April 30–May 1	Oklahoma, Kansas, Texas and Louisiana. A succession of tornadoes, including 16 in Oklahoma alone, caused 9 deaths and injuries to 85 persons; property damage was estimated at many millions of dollars.
May 20	Maceio and vicinity, Brazil. More than 100 persons died and more than 200 were injured as the result of a 60-hr. torrential rain.
June 20	New South Wales, Australia. The worst flood in the history of this area caused the deaths of 7 persons and created property damage estimated at millions of dollars.
July 17	Yangtze and Yellow river valleys, China. The worst floods in half a century, aggravated by incessant rain, were reported to have made 20,000,000 people homeless. In Hunan province alone, 57,000 persons were reported drowned, 5,000,000 were rendered homeless and 5,000,000 ac. of rice fields were destroyed.
July 23	Okinawa. Thirty-eight persons died and 252 were injured, while 40,000 buildings were damaged or destroyed when a typhoon struck this U.S. naval base; 55 fishing craft were sunk and a great proportion of U.S. installations on the island were damaged.
Aug. 5–7	Central Ecuador. An earthquake that virtually demolished four towns and laid waste sections of many others killed more than 8,000 persons and left an estimated 100,000 homeless. Property damage was estimated at more than $86,000,000. Among the towns hardest hit were Ambato, Pelileo, La Libertad, Banos, Guano, Mocha, Patate and Pillaro.
Aug. 18	Erzerum, Anatolia, Turkey. Forty-five villages, including 1,565 houses, were destroyed, some 6,000 persons were left homeless, 437 were killed and 355 gravely injured as the result of an earthquake.
Sept. 1	Japan. One hundred and twenty-three persons died, 51 were missing, 419 injured and approximately 150,000 left homeless as the result of a typhoon, followed by landslides and floods.
Oct. 8	Oberschlema, Thuringia, Germany. One hundred German miners were reported killed in a flood in a mine.
Oct. 13–14	Guatemala. Torrential rains followed by floods that did $23,000,000 worth of damage to coffee, banana and rice crops caused an undetermined number of deaths, the count ranging from a police tabulation of 171 bodies, made on Oct. 18, to a government estimate of more than 4,000, announced on Oct. 19.
Oct. 27	Southeastern India. Nearly 1,000 persons were killed in a cyclone that also caused the loss of many cattle and much property damage.
Oct. 31–Nov. 2	Republic of the Philippines. The central Philippines' worst typhoon in 12 years left a total of 975 persons dead or missing and presumed dead, besides 20,000 homeless and property damage calculated at $25,000,000.
Nov. 28	Northwest United States and southwest Canada. Thirty-four persons lost their lives as the result of storms that swept across a 1,000-mi. front.

Railway

Jan. 10	Milford, Va. Twenty-three persons were injured when ten cars of the Seaboard Airline railway's Orange Blossom Special left the rails.
Jan. 11	Bay Lake, Fla. Twenty persons were injured when another section of the Seaboard Airline railway's Orange Blossom Special was derailed.
Feb. 12	Near Tarragona, Spain. Thirty persons were killed and 40 injured when the Madrid-Barcelona express was derailed.
Feb. 18	Port d'Atelier, France. Forty-three persons were killed when a locomotive crashed into an express train..
April 28	Near Johannesburg, South Africa. Three electric trains, all headed in the same direction, were involved in the Union of South Africa's worst rail disaster, resulting in the death of 74 persons and injury to more than 90 others. One of the trains crashed into the rear of a second, driving it into the third.
Oct. 22	Nowy Dwor, Poland. In what was said to be Poland's worst rail disaster in 30 years, more than 200 persons were killed when the Danzig-Warsaw express left the rails on a curve.
Nov. 15	Near Waterval Boven, Transvaal, South Africa. At least 56 persons were killed and 105 injured when a train filled with natives returning to Mozambique from months of work in the gold mines plunged off a 70-ft.-high bridge.

Traffic

July 2–4	United States. A total of 315 persons died in traffic accidents over the July 4 week end.
Sept. 3–5	United States. Four hundred and ten traffic victims were among the 550 persons killed over the Labor-day week end.
Oct. 8–10	Canada. Accidents during Canada's 71st Thanksgiving-day week end caused the deaths of at least 43 persons, including 20 killed in highway accidents.
Nov. 23–24	United States. At least 123 persons died in traffic accidents during the Thanksgiving holiday.
Dec. 24–26	United States. A total of 378 persons died of traffic accidents during the Christmas holidays.

Disciples of Christ.

The total membership of this Christian movement in the United States in 1949 was 1,738,983; world membership amounted to 1,888,236. The Disciples celebrated "A Century of Co-operation" in 1949, holding their centennial convention at Cincinnati, O., the city in which their first convention was held in 1849. Registrations reached a total of 8,303 with an estimated attendance of well over 10,000. Dr. F. E. Davison of South Bend, Ind., served as the centennial president. Highlights included the honouring of 20 out of 22 living past presidents of the convention; the commissioning of 11 new missionaries; the dedication of 1,000 young people for full-time service and a communion service with an attendance estimated at 15,000.

During 1949 new victories were scored in the Disciples "Crusade for a Christian World." Two thousand and seven hundred young people had been recruited for full-time Christian service. Eleven million dollars of the $14,000,000 crusade goal had been underwritten. Evangelism and Christian unity were stressed as key notes of this church's message to the world.

Fifty representatives from United States Disciples of Christ participated in the 50th anniversary of Protestant missions in Puerto Rico in March. Six representative Disciple ministers and secretaries shared in the plans for the formation of a United Protestant church, U.S.A., meeting at Greenwich, Conn., Dec. 14–16.

During the year there were 206 missionaries and 2,439 nationals serving in 10 fields as follows: Africa, China, India, Jamaica, Japan, Mexico, Republic of the Philippines, Puerto Rico, Argentina and Paraguay. These fields were served by the United Christian Missionary society, a board of missions and education located in Indianapolis, Ind.

A total of $44,608,325.89 was received during 1949 for all purposes including local church support, missions and benevolence.

Headquarters: The International Convention of Disciples of Christ, 516 K. of P. Building, Indianapolis, Ind.; John A. Tate, president; Gaines M. Cook, executive secretary.

(G. M. Ck.)

Displaced Persons: *see* Dominican Republic; Refugees.

District of Columbia: *see* Washington, D.C.

Divorce: *see* Marriage and Divorce.

Dodecanese: *see* Greece.

Dog Shows: *see* Shows, Animal.

Dominica: *see* Windward Islands.

Dominican Republic.

Approximately the eastern two-thirds of the island of Hispaniola constitutes the Dominican Republic. Its area, 19,129 sq.mi., is ruggedly mountainous, like that of its neighbour, Haiti; and the pop. (official est. June 1948) of 2,214,000 is predominantly of Afro-American composition. The population of the capital, Ciudad Trujillo (known as Santo Domingo from the time of Christopher Columbus, whence the name of the nation) was about 165,000 (1949); the three major provincial cities (est. of 1946), Santiago de los Caballeros (56,000); San Pedro de Macorís (23,000) and San Felipe de Puerta Plata (16,000). The president in 1949 was Gen. Rafael Leónidas Trujillo y Molina.

History.—The commercial and industrial activities of the Dominican Republic in 1949 were moderately stimulated by the firm markets for sugar and coffee. By the late summer, virtually ll marketable supplies had been shipped abroad; and at the end f the year, a genuine coffee shortage existed—as in almost all he other coffee producing areas in the western hemisphere in ate 1949, with famine prices being paid for inferior qualities. Nevertheless, the inflow of imports did not at once reflect this brisk activity, since the great bulk of goods imported comes rom the United States, and the coffee and sugar generally are old in Europe. A slight increase (by volume) in European exports to the Dominican Republic was noted late in the year. Banking activities reflected some trends of slightly slower import movement, and accelerated exports. There was some expansion of housing construction, improved transportation and he hardwood timber trade.

President Trujillo continued to acquire, for cash, extensive armament, from whatever source available. His government, which had been intermittently upon bad terms with Haiti for ome years, became particularly aroused in late 1949 by the aleged existence of conspiracies in both Haiti and Cuba to overurn by violence the Dominican regime. Returning from a cruise in U.S. waters, the president called the national congress n extra session for the purpose of securing extensive war powers. The Dominican chargé d'affaires in Port-au-Prince, Haiti, was withdrawn after he had been held incommunicado for a week, as he alleged. Sporadic reports of expeditions of exiles, starting from Cuban soil, continued to circulate through the year, after one such diminutive expedition actually ended in failure.

Relations with the rest of Latin America and with the United Nations were uneventful. The interest of the Dominican regime n European displaced persons continued to attract relatively arge numbers of such immigrants, who received extensive governmental assistance. (C. ME.)

Education.—On Dec. 31, 1948, there was a total of 2,576 schools (including 1,172 emergency schools), all of which were maintained by he state except 53 semiofficial (state-aided) and 136 private schools. The total number of pupils was 242,545. University education was available at the University of Santo Domingo.

Finance.—The monetary unit is the peso, officially pegged at par with he U.S. dollar. The 1949 budget estimated government revenue at $66,35,260 and expenditure at $66,719,649. There was no external funded debt. Short- and long-term internal obligations totalled about $23,500,000 on Dec. 31, 1948. Notes in circulation on Nov. 30, 1949, totalled $20,90,000; the gold reserve was $4,000,000. Checking deposits in commercial banks (including government deposits) totalled $27,430,000 on Aug. 31, 1949; time deposits were $15,640,000.

Trade and Communications.—Exports in the year 1948 were valued at $82,296,399 and imports at $65,329,183. Chief exports were sugar (51%), cacao (20%), coffee (8%), molasses (5%) and leaf tobacco (4%). Principal imports included machinery and apparatus (14%), oodstuffs (12%), iron, steel and manufactures (11%), cotton and manufactures (11%) and automobiles and vehicles (8%). The U.S. (including Puerto Rico) supplied 79%; the U.S. (including Puerto Rico) (37%), the United Kingdom (26%), and Canada (20%) were the eading customers. Almost all of the sugar exports went to the United Kingdom and Canada.

There were 170 mi. of public railway, all owned and operated by the government. In addition, there were about 1,650 mi. of industrial railway, operated mainly by the sugar companies. In 1949 the mileage of urfaced highway was about 500; that of all roads was about 3,000. n 1948 there were 3,124 automobiles, 2,390 trucks, 537 buses, 495 motorcycles and 44 truck-trailers. Domestic air service was supplied by Compania Dominicana de Aviacion. International service was supplied in 949 by Pan American World Airways, K.L.M., British West Indian Airways and Caribair. In 1948 there were 2,408 telephone subscribers nd about 20,000 radios.

Agriculture.—The country is predominantly agricultural and sugar cane s the chief crop. In the 1948–49 season (September-August) 525,130 hort tons of raw and refined sugar were produced; sugar exports in 948 were valued at $41,653,858. Other important crops are cacao 1947–48: 31,000 short tons), tobacco (1948–49: 24,800 short tons), offee, maize, bananas and rice. In 1946 there were 597,000 cattle, 547,00 pigs, 346,000 goats and sheep and 1,988,000 poultry.

Manufactures.—Manufacturing is limited chiefly to the processing of gricultural commodities and the production of light consumers goods. On Dec. 31, 1947, there were more than 4,200 industrial establishments epresenting a total investment of $98,000,000, of which the sugar indusry accounted for more than two-thirds. Important manufacturing enterrises in 1949 included 14 sugar mills, a large chocolate plant (comleted in 1948), 2 breweries and a cement plant. The cost-of-living index n Ciudad Trujillo, as reported by the International Labour office, stood t 218 in July 1949 (1941=100).

Mineral Production.—Activity is limited principally to the exploitation f salt and gypsum deposits and rock-quarrying.

Donations and Bequests.

In spite of what was characterized as a "mild recession" in 1949, the indexes of giving by the people of the United States held up remarkably well. It was thought that 1949 giving would come close to the $3,178,000,000 estimated for 1947, if not to the estimated total of $3,250,000,000 for 1948.

As of Nov. 30, 1949, the John Price Jones company's yearly study of publicly announced gifts and bequests in eight large cities showed a total of $251,162,946. The cities included in the study were New York, Baltimore, Boston, Chicago, Los Angeles, Philadelphia, St. Louis and Washington, D.C.

Of this total $207,250,666 was in gifts, showing a decrease of only 3.39% from 1948. Bequests—attributable entirely to the unpredictable accident of death and not to economic factors in a given year—amounted to $43,912,280, in place of $98,232,982 the year before. This brought the combined total of gifts and bequests to a point 19.69% below the 1948 figure.

The fact that large-scale giving for philanthropic purposes still prevailed, however, was shown by another of the company's studies. This revealed that between July 1, 1948, and June 30, 1949, there were published records of 87 gifts of $500,000 and over made in the United States, for a total of $173,547,770.

Of these benefactions, 37 were bequests totalling $95,213,770, while 25 were gifts by living persons for a total of $26,954,000. Foundation and corporate support made up the balance.

The largest proportion of this philanthropy went to educational institutions. Other fields, in the order favoured, were health, fine arts, organized social work, recreation, religion and foreign relief.

Published reports of 178 fund-raising campaigns, however—responsible for a total of $361,597,538—showed the largest amounts going to organized social work and health organizations. It was estimated, moreover, that religion is the largest single beneficiary of American generosity, with gifts totalling more than $1,250,000,000 annually for religious purposes.

(J. P. J.)

Great Britain.—The already high rate of death duties which was raised in the 1949 Finance act severely curtailed large bequests. The second Viscount Leverhulme, who died on May 26, left "as far as at present ascertained" (Aug. 1949) £2,357,039. Death duties amounted to £1,656,475. He made only nominal charitable bequests, the largest being £1,000.

During the year a personal bill was presented to the house of lords by Countess Mountbatten of Burma. She wished to obtain greater control over her inheritance under the will of her grandfather, Sir Ernest Cassel. The bequest was subject to restrictions which prevented her dealing with the capital of over £1,400,000. It was stated that her income, after taxation, was about £4,500 a year and that the joint income of Earl and Countess Mountbatten was only one-ninth of what it had been in 1922. The bill was passed unanimously by the house of lords but, because of opposition by Conservative members in the house of commons, was withdrawn after a government assurance to introduce a bill to free from similar restrictions all persons affected by such bequests. The Married Women (Restraint upon Anticipation) bill was introduced by the government. It was given a second reading in the house of lords on July 5 and in the house of commons on Nov. 7. The attorney general estimated that the number of married women affected was "thousands, but not tens of thousands." An amendment to reject the bill was defeated in the house of commons by 47 votes to 180.

During the year Nottingham university appealed for a £1,000,000 endowment fund. Within five months £250,000 was received. The appeal was to be open for three years. James P. R. Lyell, a solicitor, bequeathed the bulk of his £39,250 estate to Oxford university, the income to endow a readership in bibliography. He gave to the Bodleian library 100 rare mediaeval manuscripts. (*See* also Community Chest; Societies and Associations.)

Drama: *see* Radio; Television; Theatre.
Dramamine: *see* Chemotherapy.
Dress: *see* Fashion and Dress.

Drew, George Alexander

(1894–), Canadian political leader, was born May 7 at Guelph, Ont. He was educated at Guelph Collegiate institute, Upper Canada college and the University of Toronto.

He became leader of the Ontario Conservative party in 1938, and was elected by acclamation to the Ontario legislature in 1939. In 1943 he was sworn in as premier of Ontario and minister of education. In the 1948 election, although his government won 53 out of 90 seats, he was personally defeated, and he entered federal politics.

On Oct. 2, 1948, at a dominion-wide convention he was chosen leader of the national Progressive Conservative party. The federal seat of Carleton was opened and Drew was elected to parliament on Dec. 20.

In the June 27, 1949, general election Drew retained his seat in Carleton, although his party suffered defeat at the polls and reduced its membership from 68 to 42 seats.

During the first session of the 21st parliament, Sept. 15 to Dec. 10, Drew was the centre of many stormy scenes. He strongly condemned the government methods which resulted in the raising of rents, and unsuccessfully called for the resignation of the minister of justice for the suppression of the McGregor combines report, and the resignation of the reconstruction and supply minister for the suspected lack of loyalty among national film board members.

On Oct. 31 the executive of the Progressive-Conservative association passed a unanimous vote of confidence in Drew's leadership. (C. Cy.)

Drought: *see* Meteorology.

Drug Administration, U.S.

The detection of potential sources of error in drug factories was given major emphasis in the federal drug control program in 1949. Despite the exercise of adequate precaution in most plants, faulty manufacturing procedures in a few, followed by inadequate testing of the finished products, insufficient research, poor control in the label department and inadequate warnings on the label, resulted in an unprecedented number of drug recalls. In 26 of these cases the manufacturers, frequently aided by federal and local drug officials, recovered all outstanding stocks of the suspected drugs. In the remaining seven, the Federal Security agency's Food and Drug administration issued radio and press warnings because the records of manufacturers and distributors were inadequate to locate retailers and consumers possessing the dangerous drugs. The most extensive of the 1949 recalls involved several manufacturers' lithium chloride salt substitutes found to cause lithium intoxication in patients on salt-free diets.

The Food and Drug administration intensified its efforts to restrict retail sales of prescription drugs that had moved in interstate commerce to the specific orders of physicians. Inspectors investigating the promiscuous sale of barbiturates, reported tragic tales of suicides, accidental deaths and broken families. Occasionally there was no original prescription, but usually a single prescription had been refilled repeatedly without the knowledge of the victims' physicians. In general, pharmacists refuse to sell such drugs without physicians' orders. In the exceptional cases, criminal actions were brought in federal court against druggists making promiscuous sales.

INSPECTORS of the U.S. Food and Drug administration, tuned in on 1949 television programs to listen for false or misleading statements in advertising

Seizure figures for misbranded remedies differed little in 1948 and 1949. Several involved curative claims for cancer, tuberculosis, poliomyelitis and other scourges that had been publicized by epidemics and appeals for funds. A great majority, however, promised cure or alleviation for nervous upsets, arthritis and rheumatism, stomach and intestinal disorders and skin and scalp conditions.

Before a new drug may be marketed, the manufacturer must submit an application to the Food and Drug administration, supported by research showing that it will be safe to use and that production controls will be adequate. Labelling claims of efficacy after the drug is placed on the market are subject to the misbranding provisions of the act. The most important therapeutic agents included in the 360 new-drug applications permitted to become effective in 1949 were vitamin B_{12} and three antibiotics later covered by an amendment to the act requiring predistribution certification by the administration of aureomycin, chloramphenicol and bacitracin. These drugs, produced by biological processes and assayed by biological methods, were spectacularly efficacious in many diseases not formerly amenable to treatment with drugs.

During the fiscal year, 295 batches of drugs composed wholly or partly of insulin, 12,557 batches of penicillin and penicillin products, 1,280 of streptomycin and 782 of dihydrostreptomycin were certified after passing tests for purity, potency and stability. Also certified were 4,858 batches, representing more than 4,000,000 lb., of coal-tar colours for use in foods, drugs and cosmetics.

More than 2,000 factory inspections and the examination of samples of 11,785 shipments of drugs and devices resulted in 375 seizures and the institution of 80 criminal prosecution and 4 injunction cases. More than 1,900 drugs and devices that did not comply with the requirements of the United States were denied entry at the ports. (*See* also Federal Security Agency; Narcotics and Narcotic Traffic.)

(P. B. D.)

Drugs: *see* Agricultural Research Administration; Alimentary System, Disorders of; Allergy; Anaesthesiology;

Biochemistry; Chemistry; Chemotherapy; Chemurgy; Dentistry; Dermatology; Drug Administration, U.S.; Endocrinology; Entomology; Gynaecology and Obstetrics; Medicine; Narcotics and Narcotic Traffic; Urology; Veterinary Medicine. *See* also articles on specific diseases, such as Anaemia; Diabetes; Leprosy; etc.

Drug Traffic: *see* Narcotics and Narcotic Traffic.

Drunkenness: *see* Intoxication, Alcoholic.

Dry Point: *see* Etching.

Dutch Overseas Territories: *see* Netherlands Antilles; Netherlands Overseas Territories; Surinam.

Dutra, Eurico Gaspar

(1885–), president of Brazil, was born in Cuiabá, Brazil, on May 18. He was educated in Rio Pardo and Porto Alegre, Rio Grande do Sul, and was graduated from the Brazilian Military school, Rio de Janeiro, in 1908. Becoming a second lieutenant of cavalry in 1910, he progressed through the military grades until in 1932 he was named brigadier general and director of military aviation. In 1936 he was named minister of war and served in that capacity through World War II, during which he visited the U.S. to inspect war activities and organized the Brazilian expeditionary force that fought in Italy. He was elected president of Brazil in Dec. 1945, and took office Jan. 31, 1946. His government extended recognition to Israel in Feb. 1949. In May President Dutra made the first visit to the U.S. that had been paid by any Brazilian chief of state since that of Emperor Dom Pedro II in 1876. He was greeted by Pres. Harry S. Truman, and on May 21 the White House announced that the two chiefs of state had reached an agreement to work out a program for economic development and social progress. The negotiation of a cultural treaty between the two nations was also approved.

Dyestuffs.

The volume of dyes sold during the first seven months of 1949 was approximately 15% lower than for the same period in 1948. The tightening of consumer buying forced reductions in the textile, paper, leather and other colour-consuming industries with a resultant decrease in the consumption of dyes. The situation changed materially in August with renewed industrial activity, and the demand for dyes continued strong throughout the balance of the year. Export requirements remained fairly stable despite the uncertainty of dollar exchange in many foreign countries. Little change occurred in the weighted average domestic price of dyes; a reduction of 4% was made on a few products but the unit value per pound was comparable to the previous year's figure.

The U.S. dyestuff industry maintained close co-operation with scientific and technical associations. These played a vital part in establishing high standards of dyed and finished textiles by developing new testing methods and specifications which were widely adopted by the textile industry. Dyestuff research resulted in the marketing of a number of new products possessing better fastness and improved dyeing properties. The use of fast vat colours was extended to a broader variety of fabrics with varying end uses that gave the consumer the ultimate in colour durability. New hydrophobic and other types of synthetic fibres presented complex coloration problems, but it was generally possible to provide colours and formulas adapted to the chemical characteristics of the fibre. The ability of the industry to meet these previously unknown exigencies became an important factor in the development of new synthetics.

According to official figures released by the United States tariff commission, the production of all types of dyes in 1948 amounted to 201,376,000 lb., 5% less than the record output of 212,000,000 lb. in 1947. The decline in several low-priced dyes, including sulphur black and indigo, was largely responsible for this decrease. Sales of all dyes in 1948 totalled 186,782,000 lb. valued at $163,833,000 compared with 205,210,000 lb. valued at $148,154,000 in 1947. The unit value of all dyes sold amounted to 88 cents per pound compared with 72 cents in 1947. The class of vat colours still remained the most important from the standpoint of both production and sales, and in 1948 accounted for 29.7% of the total quantity produced, direct dyes for 25.8%, acid dyes for 12.7% and sulphur dyes for 10.1%.

Four classes of dyes accounted for 85% of the total production of all dyes: azo dyes for 44%, indigoid and thioindigoid dyes for 16%, anthraquinone vat dyes for 14%, and sulphur dyes for 10%. The largest increase in 1948 was registered by the azo group, which increased 13.2% to 88,559,000 lb. while the greatest decrease was reported for the sulphur dyes, which declined in output about 51% from 41,820,000 lb. in 1947 to 20,366,000 lb. in 1948. Production of direct dyes increased 20% to 51,967,000 lb. and acid dyes increased 9% to 9,298,000 lb.

Sales of vat dyes, other than indigo, were valued at $40,131,000, direct dyes at $38,605,000, acid dyes at $22,955,000 and sulphur colours at $6,394,000, the latter having been exceeded in total value by the azoic, basic and acetate dyes. Figures for 1949 production and sales were not available at the close of the year. (A. G. Br.)

Europe.—It became evident in 1949 that European output of dyestuffs was keeping pace with consumption. With the possible danger of overproduction of dyestuffs in mind, as well as to see what reductions in dollar expenditure might be possible, the chemical products committee of the Organization for European Economic Cooperation undertook a study of seven major chemical products, one of which was dyestuffs. Replies to a questionnaire by the committee to the various countries revealed that a considerable increase in production was anticipated.

European Production of Dyestuffs

(In metric tons of commercial product)

Country	Production 1947	Production program 1952-53	Anticipated Exports 1952-53
Benelux	1,900	6,400	4,500
France	16,000	27,000	10,000
Italy	8,900	20,000	8,000
United Kingdom	34,000	52,000	20,000
Switzerland	15,000	20,000	18,500
Germany (Bizone)	4,300	33,000	18,000
French zone of Germany	4,000	4,300	1,000
Total	84,100	162,700	80,000

A working party, consisting of representatives of the western European countries, was formed to make a critical study of consumption and foreign outlets, but had not yet published its report.

Dyestuff manufacturers reported a widening of interest in fast colours and specialities. There was also an increasing demand for special colours for mixed fibres.

Some light on Russian dye production was thrown by Herbert Levinstein, during an address at Bradford in 1949. The industry formed an important part of the latest five-year plan and was scheduled to produce by 1950 one-and-a-half times as much as before World War II. The target was 43,000 tons, with special emphasis on fast colours.

(L. E. Ms.)

Ear, Nose and Throat, Diseases of.

W. J. Hitschler made an exhaustive study of opinion in reference to the effect of swimming and diving on sinusitis and hearing loss. Eighteen hundred letters and post cards were sent to swimming coaches, general physicians, school and health physicians, ear, nose and throat physicians, physical instructors and many swimmers.

Large numbers of students were examined, and Hitschler reached the following conclusions:

1. The incidence of sinusitis and hearing loss among healthy, adult, trained swimmers was no greater than among unselected college graduates.
2. There was less severe upper respiratory infection among swimmers than among the controls.
3. In the experimental group, the figures suggested that lesions contracted from swimming and diving were more likely to be severe than were those contracted from other causes.
4. Geographical location bore no definite relation to the incidence of disease.
5. Coaches and swimming experts saw little infection; school and college physicians and boarding school personnel saw more; otolaryngologists (ear, nose and throat men) still more; and pediatricians most.
6. Salt water swimming was considered safer than fresh water swimming.
7. Factors emphasized leading to the contraction of disease were lack of proper training and supervision, immaturity, the presence of already existing upper respiratory infection and contaminated water.

Haemorrhage.—Haemorrhage occurs in all surgery of the ear, nose and throat and is often difficult to stop; hence the constant search for an easy, foolproof method of stopping bleeding. However, after carefully reviewing the literature and their own extensive experience in all manner of nose and throat surgery, B. H. Senturia, J. H. Ogura and T. E. Walsh found that thrombin was useful in controlling venocapillary oozing after tonsillectomy and adenoidectomy. Vigorous venous and arterial bleeding were not controlled by the use of thrombin.

The application of thrombin may be of value in the control of venocapillary ooze from the nose, but brisk bleeding from Little's area (front interior of nose on septum; *i.e.*, central partition) or from the lateral nasal wall was not controlled. Bovine thrombin, as a sterile white powder, was used in the middle ear following radical mastoidectomy, and provided a dry bed for skin grafting. Also, it was effective in cases of bone and soft tissue oozing, dural and lateral sinus bleeding where epinephrine failed and where cautery (hot wire) was deemed inadvisable.

Absorbable sponge saturated with thrombin was demonstrated to be a harmless and valuable adjunct for use in the following surgical procedures: (1) good results were obtained during radical mastoidectomy; *e.g.*, obliteration of inaccessible parts of the mastoid cavity prior to skin grafting; (2) it was found useful to patch lacerations and incisions of the dura (covering of the brain), jugular bulb and lateral sinus; (3) it was used successfully as an innocuous haemostatic agent as well as a protective cushion over the exposed facial nerve; (4) the sponge was used to protect linear tears in the membranous flap during the fenestration operation (window operation on the inner ear) for a certain type of conduction deafness; (5) good results were obtained in radical neck dissection where unusual bleeding followed X-ray therapy; (6) promising results were obtained in the use of a thin sheet of sponge as an interseptal bridge in cases of postoperative through and through perforations of the nasal septum; (7) unsatisfactory results were obtained when the sponge was used to control brisk bleeding from the lateral nasal wall; (8) no methods could be devised for the safe use of absorbable sponge in the oropharynx or nasopharynx.

Antibiotics.—A. C. Furstenberg gave an excellent résumé of the varied uses of all the new powerful drugs used in ear, nose and throat diseases. He concluded that nearly all acute infections of the ear, nose, sinuses and throat respond in a gratifying manner to the intramuscular administration of penicillin. The isolation and identification of the causative organism in every case of infection is an idealistic pronouncement but hardly feasible and practicable in everyday practice. When, however, a definite clinical response to the antibiotic is not promptly observed, the organism must be identified and its sensitivity determined.

When dealing with meningitis, where time is an essential factor, delay for the identification of the organism can hardly be advocated. There can be no compromise with the prompt institution of therapy. Antibiotics of proved values—penicillin, streptomycin, and even aureomycin and chlormycetin, particularly the latter when an intracellular organism is suspected—should be employed in maximum dosage in conjunction with chemotherapy. Some of these agents will of course be eliminated when the organism is found and the specific antibiotic can be used.

Penicillin, to be effective, must come in actual contact with the organism and maintain a sustained contact. The difficulty of applying this principle to the upper air passages accounts perhaps for the disappointing results observed from the popular methods of topical administration. Penicillin aerosol is of little value in the treatment of bronchiectasis (dilatation of the bronchi) although direct application of concentrated solutions of penicillin to the bronchiectatic cavities through the bronchoscope was productive of encouraging results.

A dense capsule surrounding a chronic abscess in the neck is a barrier to penicillin therapy. Likewise necrotic (dead) tissue or a foreign body within the abscess renders the lesion resistant to the antibiotic. Similar factors influencing adversely the effect of penicillin were found in chronic suppurative otitis media (pus-forming middle ear disease), and mastoiditis, osteomyelitis of the skull and facial bones and chronic nasal accessory sinus disease. No antibiotic known in 1949 could cure these pathological entities when used systemically, locally or by both methods.

The possible injurious effects of penicillin in the absence of infection were pointed out. The normal basic flora of the throat may be altered to include harmful organisms. It could be argued that the prolonged administration of the antibiotic might produce resistant organisms, which would not respond in the future to a sorely needed antibiotic.

Streptomycin was found to be particularly effective in tuberculous cervical adenitis and in tuberculous mucous membrane lesions. Its allied agent dihydrostreptomycin, comparatively free from neurotoxic effects (nerve injury effects) gave promise of replacing the original antibiotic in treatment of these conditions. However, until further experimentation yielded an improved product devoid of irritating effects, dihydrostreptomycin could not be advocated for use in the spinal column.

Nasal Surgery and Rhinoplasty.—The most significant advances in nasal surgery were brought to the fore by Armand Carron, Samuel Fomon, and Dean M. Lierle and W. C. Hoffman. There were changing concepts in the structural anatomy and surgery of the obstructing septum (the cartilaginous bony partition separating the two sides of the nose). As Carron pointed out, a closer liaison had been effected between physiology; *i.e.*, reason and function, and nasal surgery. The nasal cartilages, the external ones, both lower and upper, are tremendously important in the ventilation of the lung and help to regulate the minute volume of inspired air. Detailed diagnoses of causes of collapsing alae (lower cartilages and flare of nose) and their surgical correction were clearly presented by Carron. One of the significant trends in otolaryngology in 1949 was the formal incorporation of rhinoplastic surgery in the training of all those interested in diseases of the ear, nose and throat.

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(G. E. L.; G. M. C.)

Earnings, Company: *see* BUSINESS REVIEW.
Earthquakes: *see* DISASTERS; SEISMOLOGY.

ast Africa, British: *see* British East Africa.

astern Orthodox Churches.

The new ecumenical patriarch, Athenagoras , was solemnly enthroned in Istanbul, Turk., on Jan. 27, 1949, nd the year which elapsed saw a continual sharpening of the livision within the Orthodox body. Four days after his enhronement, Athenagoras, who had only lately relinquished his J.S. citizenship, went to Ankara, Turk., to deliver a personal nessage from Pres. Harry S. Truman to Pres. Ismet Inönü. As gesture of satisfaction at his election the Turkish government ave him formal permission to appear publicly in his robes of ffice. And not only with the United States and the Turkish overnments, but with the papacy and the Roman Catholic Church, the new ecumenical patriarch developed a cordiality hat his predecessors had not found it possible to achieve. In is first allocution after his election Athenagoras called on the Orthodox to co-operate with all Christian churches, including he Roman Catholic Church; in March he called on Msgr. Andrea Cassulo, apostolic delegate to Turkey, to offer his conratulations on the tenth anniversary of the coronation of Pope Pius XII; and on Greek Independence day it was at his special nvitation that Monsignor Cassulo came to hold a Roman Cathoic religious service on the premises of the Greek consulate in stanbul—these were illustrations of the greatly changed atnosphere that the new ecumenical patriarch introduced.

The patriarchate of Moscow, on the other hand, continued to dentify itself more and more intimately with the policies of the J.S.S.R., thus accentuating its separation from most of the rest f the Orthodox world. The Moscow theologian A. Krachenninikov, in the *Journal of the Moscow Patriarchate* in the utumn, went as far as anyone yet had done, when he declared hat the Russian Church, in supporting the foreign policy of he soviet government, had fulfilled "a holy duty of the religion f love" and that the position of the Russian Church had not varied "in the face of the current forces in the world today—hose of progress and those of reaction." He went on to make a violent and characteristic attack on the Roman Catholic Church nd the World Council of Churches, and to say that there was n "irreconcilable opposition" between the Orthodox east and he rest of Christendom. Patriarch Alexei of Moscow made a ypical comment in August, when he replied to a series of quesions from Reuters' agency on the papal excommunication of Communists; Athenagoras, on the other hand, had expressed himself in sympathy with that Roman decree.

The division among the Orthodox reflected itself in various reas: the patriarch of Alexandria had the reputation of feeling ome sympathy with Moscow; and there were many misgivings mong the Orthodox in Palestine when the Israeli parliament lecided to acknowledge the claims of the Moscow patriarchate o Russian Orthodox property and institutions in Israel. In Yugoslavia Patriarch Gavrilo found some relief in Marshal Tito's quarrel with the Cominform; and Balkan prelates, like he metropolitan Josip of Skoplje and Bishop Varnava of Saraevo, could even be described as anti-Russian. On the other hand, the patriarch Justinian of Rumania showed himself more nd more committed to the Communist revolution.

In Greece, Archbishop Damaskinos of Athens, the former egent, died on May 20, and on June 4 the Holy Synod elected s his successor the metropolitan Spiridon Vlachos of Janina. (*See* also Religious Education.) (M. Dk.)

East Indies, Dutch: *see* Netherlands Overseas Territories.

Eclipses of the Sun and Moon, 1950: *see* Astronomy; Calendar, 1950 (page xxxii).

Economic Cooperation Administration: *see* European Recovery Program; Organization for European Economic Cooperation.

Economics.

The central theme of the annual December meeting of the American Economic association at New York city, "A Stocktaking of American Capitalism," suggests the dominant spirit in the organized discipline of economics for the year 1949. Several significant and sobering events and developments of the year contributed to this attitude of critical self-appraisal by suggesting the existence of soft spots in the economy of the United States and by playing up contrasts between conflicting world economic ideologies. These included a pronounced recession, a period of grave uncertainty and an unmistakable recovery at about mid-year; a continuation of the nearly complete political impasse in U.S.-soviet international political relations; currency devaluation by Britain and the sterling bloc; and an apparently only partially successful demand by Paul G. Hoffman, director of the European Recovery program, that the Marshall plan nations of Europe coordinate their economies by tariff reduction, trade quota reforms and collaborative planning. At a time when the United States faced the certainty of an unbalanced federal budget in a predominantly prosperous year, acute differences in top level economic opinion were evinced by the resignation of Edwin G. Nourse as chairman of the president's council of economic advisers. In the meantime the disposition and tactics of unionism continued aggressive even though the inflationary movement had apparently stopped.

With economists in a stocktaking mood it was inevitable that the interest in aggregative economics already sharpened by the events and writings of 1947 and 1948 should have become intensified. The effects of such things as changing monetary policy, technological advance, income inequality, monopolistic and oligopolistic restrictionism, power blocs and collective bargaining by a type of economic blackmail on the total operations and income flows of the economy were uppermost in the minds, analytical agenda and research projects of economists. There was considerable evidence that oligopolistic pricing, with or without collusion, was coming more and more to be recognized as the typical or modal market situation in the United States. Aggregative economics and oligopolistic price analysis, then, both with a marked emphasis on institutional factors, moved into the forefront of economic theory.

The veritable flood of "new approach" elementary texts perceptibly abated during the year. Books in the area of intermediate theory became more numerous. There was a heightened interest in locational analysis stimulated to some extent by a number of industrial reallocation projects for national defense. There was a continuing lively interest in econometrics.

A cold, objective, critical, but sympathetic diagnosis, rather than either a blatant and partisan defense or a complacent acceptance of capitalism, is probably the best characterization of economics in the United States in 1949. (G. J. C.)

Ecuador.

A republic on the west coast of South America, straddling the equator, after which it was named, Ecuador is bounded on the north and east by Colombia, on the east and south by Peru and on the west by the Pacific ocean. It has an area of 104,510 sq.mi. (including the Galápagos Islands, a dependency of 3,029 sq.mi.) and a population (1948 estimate) of 3,362,000. About 60% of this figure represents Indians, 30% mestizos, 9% whites and 1% Negroes. Quito (pop., 1947 census, 200,185) is the capital; other major cities (with pop. estimates) are Guayaquil, the main port (235,000); Cuenca (53,520); Riobamba (28,500); Jipijapa (23,000);

RESCUERS searching for casualties among the ruins of the cathedral at Ambato, Ecuador, following the disastrous earthquake of Aug. 1949, in which more than 8,000 persons were reported killed and about 100,000 made homeless

Vinces (22,350); Chone (22,280); Ambato (22,300); Loja (21,560); and Latacunga (21,750). The predominant religion is Roman Catholicism. President in 1949: Galo Plaza Lasso.

History.—Although political opposition began to coalesce in 1949, the Plaza administration remained fundamentally stable. The government pushed forward with sweeping programs calling for land distribution and resettlement, irrigation, selective credits to farmers and other producers, and servicing of the external debt. The administration was hampered somewhat by the gradual disintegration of the National Civic Democratic Movement, the hybrid organization chiefly responsible for President Plaza's election in 1948, and on June 27 the Socialist party proclaimed its "revolutionary opposition" to the government. A subversive plot was broken up on July 4, when Julio Moreno Espinosa of the Liberal Radical party, Juan Manosalvas of the Federation of University Students, and five army majors were imprisoned.

Delegates from 14 American republics attended the fifth Pan American Press congress, held at Quito from July 11 to 18.

On Feb. 12 a realistic radio dramatization of H. G. Wells's *The War of the Worlds* so terrified residents of Quito that a mob attacked and burned the building which housed both the radio station and the offices of *El Comercio*, the capital's leading newspaper. Twenty persons were killed in the rioting, and the property damage was estimated at $350,000. Three officials charged with responsibility for the broadcast were arrested.

South America's most catastrophic earthquake in ten years struck Ecuador in a series of 15 tremors occurring between Aug. 5 and 7. The centre of destruction lay about 50 mi. south of Quito, and the affected area embraced about 1,500 sq.mi. and a population of approximately 300,000, of whom 100,000 were left homeless. The death toll, at first placed at 4,600, was eventually estimated to be more than 8,000, and the property damage was calculated at more than $86,000,000. The village of La Libertad (pop., 600) was completely buried in a mile-wide pit more than 1,500 ft. deep. Between 400 and 500 people died at Ambato, where a reported 70% of the houses were uninhabitable. President Plaza hastened to the stricken area to learn the extent of the disaster, and reported in a radio address on Aug. 7: "Just to give you an idea of the magnitude of the catastrophe, in one town of about 3,500 residents [Pelileo], about 300 survived."

Relief activities, jointly undertaken by the U.S. and other American republics, were organized within a few hours. A "mercy airlift," grouped around about 20 aeroplanes based at the Panama Canal Zone, was in operation by the afternoon of Aug. 7, delivering doctors, nurses and supplies to the stricken area and evacuating refugees and injured persons.

In balloting at Lake Success, N.Y., on Oct. 20, Ecuador received a nonpermanent seat on the United Nations Security council. (G. I. B.)

Education.—Primary education is gratuitous and compulsory. In the school year 1948–49 there were 3,029 public primary schools with 208,155 pupils and 396 private schools (mostly Roman Catholic) with 56,116 pupils. There were 57 public secondary schools with 11,321 pupils, 68 private schools with 5,502 pupils and 2 municipal schools with 1,192 pupils. There were four public universities—Quito (2,383 students matriculated), Guayaquil (1,472), Cuenca (541) and Loja (144)—and one private university—the Catholic university of Quito (60 students). Education was scheduled to receive 20.5% of the 1949 budget.

Finance.—The monetary unit is the sucre, valued on Oct. 15, 1949, at $0.0741, U.S. currency, official rate, and at $0.0544, free rate. The national budget for 1949 balanced revenue and expenditure at 436,400,000 sucres. The foreign debt on Nov. 30, 1947, was $37,595,000; the internal debt on Oct. 31, 1947, was 124,262,000 sucres. Notes in circulation on Oct. 31, 1949, totalled 330,000,000 sucres; the gold reserve was $20,600,000. On Sept. 30, 1949, commercial banking deposits were 368,000,000 sucres, time deposits were 99,000,000 sucres, and government deposits 58,000,000 sucres.

Trade and Communications.—Foreign trade through the port of Guayaquil in 1948 included exports (excluding gold) valued at 462,000,000 sucres and imports valued at 568,146,000 sucres. Chief exports were rice (41%), cacao (39%), coffee (8%) and petroleum (5%). Principal customers were the U.S. (35%), the Philippines (13%) and Venezuela (4%). Leading suppliers were the U.S. (73%) and the United Kingdom (6%).

The length of the nine railroads in operation in 1947 was 650 mi. Highways (1947) included 1,591 mi. of main roads and 1,121 mi. of branch roads. In 1948 there were 2,921 automobiles, 4,245 trucks and 945 buses. Air service is maintained by two Ecuadoran companies—Transandina and Ateca (Aereos Transportes Ecuatorianos)—and by Avianca (Aerovias Nacionales de Colombia), Braniff Airways, Lineas Aereas TACA de Colombia and Panagra. On Dec. 31, 1948, there were 43 radio broadcasting stations.

Agriculture.—Ecuador's economy is basically dependent upon its export crops. Production of the principal export crops in the crop year 1948–49 was estimated as follows: cacao 22,000 short tons; coffee 345,000 bags of 132 lb. each; and rice (1947–48) 97,000 short tons (milled). Other crops include bananas, citrus fruits, castor beans, tobacco and cotton. In 1945 there were about 1,200,000 cattle, 1,443,000 sheep and 346,000 goats.

Important forest products include tagua nuts (exports 1947: 14,325 short tons), balsa wood (1,250 short tons), hardwood logs and lumber (3,750 short tons) and cinchona bark. Rubber collection and exports dropped sharply in recent years; only 83 short tons were exported in 1947.

Manufactures.—The most important manufacturing activity is the textile industry, which produces cotton (principally), woollen, silk and rayon textiles, some of which are exported. The manufacture of *toquilla* (Panama) hats is also important; 3,116,387 hats were exported in 1947. Numerous factories produce consumer goods for domestic consumption.

Mineral Production.—Production in 1948 (South American Development Co.) included gold 70,196 fine oz.; silver 226,664 fine oz., and lead 760,226 lb. Production of petroleum, concentrated on the Santa Elena peninsula in Guayas province, was 2,460,000 bbl.

Education. The chief educational trends during 1949 in the United States were the following: (1) an all-out campaign to secure a federal law which would bring the level of education in the poor states up to that of the more fortunate ones; (2) the rise of religious tempers, especially the Catholic and the Protestant, over the issue of federal aid to education; (3) the increase in public interest with regard to the improvement of the material and pedagogical conditions, particularly in the south and the west; (4) the persistence of the shortage of suitable school buildings and of qualified teachers in the elementary schools; (5) the intensification of the efforts to reduce discrimination against minorities in education and to grant the Negroes equal rights to schooling all over the nation; (6) the growing and widening debates on the place of communism and Communists in the schools; (7) the rise of enrolments on all scholastic levels, with a falling off in veterans' attendance in the colleges; (8) the steady increase in the number of foreign students attending U.S. colleges and universities; (9) the extension of the idea of regional higher education from the south to the west; and (10) the continued interest in international educational co-operation and in the work of U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural organization).

According to the United States office of education, the school year 1949–50 would be marked by the following attendance figures: elementary schools, 23,377,500; high schools, 6,533,000; higher education, 2,400,000; private commercial and nursing schools, 361,000; grand total, 32,671,500. The actual number of persons in school during 1948 was 31,880,000. With the birth rate still climbing, educational leaders predicted a rise in enrolment in elementary and high schools for several more years.

There were three sets of statistics on attendance in the colleges and universities. The United States office of education estimated that 2,456,000 students were enrolled in 1,809 higher institutions, an increase of 2% over the figure for 1948, in spite of a drop of 166,000 in the number of veterans. The results of a questionnaire survey of 1,387 colleges and universities, publicized in November by Benjamin Fine, education editor of the *New York Times*, revealed 2,510,931 students. President Raymond Walters of the University of Cincinnati, Cincinnati, O., in his 30th annual survey of statistics in higher education reported a total of 1,567,500 full-time students and 427,295 part-time students, or an over-all enrolment of 1,994,795, in 753 approved four-year institutions (*School and Society*, Dec. 17, 1949). Veteran attendance, according to the office of education, fell off from 1,022,000 in 1948 to 856,000 in 1949, a decrease of 16%. (*See* also VETERANS' ADMINISTRATION, U.S.)

Federal Aid.—Once more, President Harry S. Truman took the initiative in January by urging in his message on the state of the union that congress act in behalf of "prompt federal financial aid to the states to help them operate and maintain their school systems." He maintained that "shocking" educational conditions prevented "millions of our children" from "receiving a good education." His budget message to congress included a request for $300,000,000 for "federal aid to education." Also in January, Senator Elbert D. Thomas of Utah introduced a bipartisan bill, S. 246, authorizing "the appropriation of funds to assist the states and territories in financing a minimum foundation education program of public elementary schools, and in reducing the inequalities of educational opportunities through public elementary and secondary schools, for the general welfare, and for other purposes." This bill, which was the same as S. 472 passed in 1948, allotted $300,000,000 per annum to the states on the basis of need and with no federal control of school policy. Each state was to receive at least $5 for each child in elementary and high school. Those states operating separate schools for minority races were to give a proportional share of the money for the improvement of these schools. The senate passed S. 246 by a bipartisan vote of 58 to 15, a wider margin than in 1948.

The house of representatives continued its practice of letting educational legislation bog down. Its Barden bill (H.R. 4643), which differed from S. 246 by restricting the annual fund of $300,000,000 to the public, tax-supported schools and banning the extension of auxiliary school services to the nonpublic schools, ran into a snag in the house labour and education committee after Cardinal Francis J. Spellman of New York city denounced it as a discriminatory measure. Despite efforts to compromise, there was no congressional action on the issue of federal aid to education. Opposition to federal legislation on education was also expressed on grounds other than the religious. In the forefront were the United States chamber of commerce and such leading educators as presidents Dwight D. Eisenhower of Columbia university and Harold W. Dodds of Princeton university, the latter two chiefly because of their belief that federal aid would involve federal control of schools. Former President Herbert Hoover opposed federal aid, whereas the task force Report on Public Welfare, which was issued in January by his Commission on Organization of the Executive Branch of the Government, was in favour of it.

Legislation enacted by the first session of the 81st congress included a grant of $7,500,000 to local school agencies for educational services to children on federal reservations or in defense areas; a fund for the construction of public schools and colleges in time of depression; the continuation of gifts of surplus property to schools; the restriction of federal funds to veterans' courses which were not avocational or recreational in nature, and the withholding of scholarships under the Atomic Energy commission program from persons who advocated the violent overthrow of the United States government; and money for the instruction of Finnish and Chinese students in U.S. colleges and universities. An attempt to raise the Federal Security agency to the level of cabinet status was defeated. Some educators felt that the U.S. office of education, under this plan, would fall under political control.

Elementary and Secondary Education.—The annual report of the National Education association (N.E.A.) in December revealed that about 250,000 pupils attended half sessions in many school systems and that at least 4,000,000 more suffered from overcrowded classrooms and poor educational conditions. The U.S. office of education judged that an investment of $11,000,000,000 was required to bring up to par the nation's school buildings and facilities. The N.E.A. reported in April that the grade schools were devoting four times as much time to the "three R's" as they did a century before. Questions as to the validity of intelligence tests and the use of intelligence quotients (I.Q.'s) as a basis for school curricula were raised at meetings of the American Association of School Administrators by Allison Davis of the University of Chicago. According to Davis, the tests, by their very nature, favoured children of the more fortunate economic levels. This view received support by some psychologists and was attacked by others. Other events of interest were the debates about the teaching of sex education, especially in the form of films; the increased emphasis on American history in New York state; the requirement of a course in driving for all high school students in California; and the stress in *Educational Forum* and other professional journals on the fact that the fees charged in many high schools for supplies, workbooks and other purposes forced families of low income to withdraw their children before the completion of their studies.

Higher Education.—The salient problem facing colleges and universities in 1949 was probably the shortage of funds. A survey in October of 630 institutions by the *New York Times* indicated that 20% of the private colleges were operating at a deficit; that nearly all of the colleges found it more difficult to raise funds among the alumni and the public than in 1948; that average tuition rates had been increased from $299 in 1948 to $312 in 1949; and that students had to pay more for nearly everything else pertaining to higher education. Responsible administrators pointed out that the rising costs of obtaining a college education prevented about a third of the qualified candidates from matriculating. Officials in many universities also showed concern over the dearth of money for research in the social sciences and the humanities. The sum of $100,000,000 which was donated by governmental and private agencies, according to a report by the *New York Times* in December, went mainly to various types of scientific research projects. Included among the larger grants in 1949 were $8,000,000 to New York university (Bellevue medical centre), and $5,000,000 to both Harvard university and the Massachusetts Institute of Technology by the Rockefeller foundation.

Another significant question considered in higher educational circles in 1949 was that of qualified young men and women who could not afford to attend college. At a conference in January, the Association of American Colleges urged the federal government to provide some 400,000 scholarships and fellowships at an estimated annual cost of $200,000,000. In September, the senate approved S. 1453, a measure setting up a five-year emergency program of scholarships and grants in the professional fields of medicine, dentistry, public health, nursing, dental hygiene and osteopathy. New York state authorized by law the competitive award of scholarships to 100 students of medicine and dentistry. Much publicity was given in the newspapers to the proposal by Earl J. McGrath, the new United States commissioner of education, that the federal government allot $300,000,000 each year for scholarships to be apportioned among the several states in accordance with a definite formula. According to this plan, superior high school pupils obtaining high scores on objective tests would have a chance to attend approved colleges for a period of four years.

Also of serious concern to administrators was the problem of how to evaluate the instructional offerings of colleges and universities, since the Association of American Universities had decided to discontinue its accreditation activities. A number of officials in higher education suggested the creation of a single agency, on the model of the American Medical association, to accredit all institutions. However, there was no move in this direction by the end of the year. In the realm of the collegiate curriculum there were several interesting events, such as the inauguration of a school of history and international affairs at Lafayette college, Easton, Pa.; the introduction of a course, "Great Decisions," dealing with current problems in a world framework, at Cornell university; the replacement of group requirements by specific course requirements at Barnard college, New York, N.Y.; and the utilization of various recording devices in the teaching of foreign languages at Cornell, Georgetown and Yale universities. Leaders in higher education continued to express their approval of the academic standing of veteran students. An order by the Veterans' administration in September attempted to restrict the veterans' privilege of changing schools and courses. Although this regulation was based on public law 266, it was rescinded in October on account of vigorous protests.

The Teacher Situation.—As in previous years, the teacher shortage continued to be a vexing problem. This was particularly true with respect to elementary schools. Dr. Ray C. Maul's study for the National Education association revealed that there were 260,000 elementary school teachers who lacked proper qualifications for their duties; that only 28,000 qualified teachers were being made available by the teachers colleges for elementary school service in September, whereas there existed a need for 150,000 elementary teachers; and that there were 65,000 college graduates prepared to teach in the high schools, with only 30,000 positions available. Enrolment in the teachers colleges showed an increase in 1949, according to the annual surveys by the office of education and Pres. Raymond Walters of the University of Cincinnati. The latter reported an over-all total of 153,099 full-time and part-time students in 104 accredited teachers colleges, a rise of 14% over the enrolment in 1948.

To meet the teacher shortage, educational organizations carried on campaigns to obtain recruits for the teaching profession. The American Association of Colleges for Teacher Education, a department of the N.E.A., urged the federal government to grant $100,000,000 annually in the form of scholarships to high school graduates to attend teachers colleges, but there was no legislative action. It was evident that low salaries were still responsible for the lack of candidates for elementary school positions. The N.E.A.'s estimate of a national average salary of $2,985 for 1949–50 for teachers in the elementary schools was slightly above the average of $2750 for the previous year.

The annual report by the N.E.A., released toward the end of 1949, contained important data about the teacher problem. This document stated that 36,000 more teachers were needed for the nation's schools, at least 28,800 of whom were urgently required for the elementary classes. In addition, the report pointed out that the increase of 20,000 teachers was insufficient to meet the demand; that, on account of the deplorable school conditions, a total of 250,000 children were attending half sessions in many school systems; and that at least 4,000,000 more pupils were receiving poor educational service.

Adult Education.—The Great Books courses continued to flourish in public libraries in many parts of the country. To inform the public about atomic energy, the Oak Ridge Institute of Nuclear Studies established in March the American Museum of Atomic Energy, the first permanent institution of its kind in the world, according to its sponsors. A survey by Prof. Paul L. Essert of Teachers college, Columbia university, in June indicated that about 30,000,000 persons were benefiting from the various programs of adult education. In December, the office of education published a series of readers and teaching aids to teach the "three R's" to illiterate adults. This was the outcome of a program of research carried on for three years by the Project for Literacy Education, under the direction of Dr. Ambrose Caliver, specialist in the division of higher education.

Race and Religion.—There was evidence in 1949 that a concerted effort was being made to obtain equal rights in education for all citizens. Special attention was given to the problem of improving the Negro's educational status in the south. The campaign in behalf of regional collegiate centres to provide better professional education to Negro students, while continuing the practice of segregation, appealed to many southern educators, but not to the Negroes. A Board of Control for Southern Regional Education was organized, with former Governor Millard F. Caldwell of Florida as chairman.

There were several court suits involving the rights of the Negro in education. One suit in the federal court in Valdosta, Ga., which sought to obtain equal educational facilities for Negroes, was supported by many white southerners and strongly opposed by Governor Herman Talmadge. In rejecting a suit by a Negro high school graduate to be admitted to the school of nursing of the University of Maryland, a Baltimore court gave sanction to segregation. An outcome of earlier court action by G. W. McLaurin, a Negro graduate student, was the enactment of a law by the state of Oklahoma to enable Negroes to attend public colleges and universities under segregated conditions. The appeal by McLaurin to the United States supreme court to reverse this policy of segregated attendance was not acted upon by the close of the year.

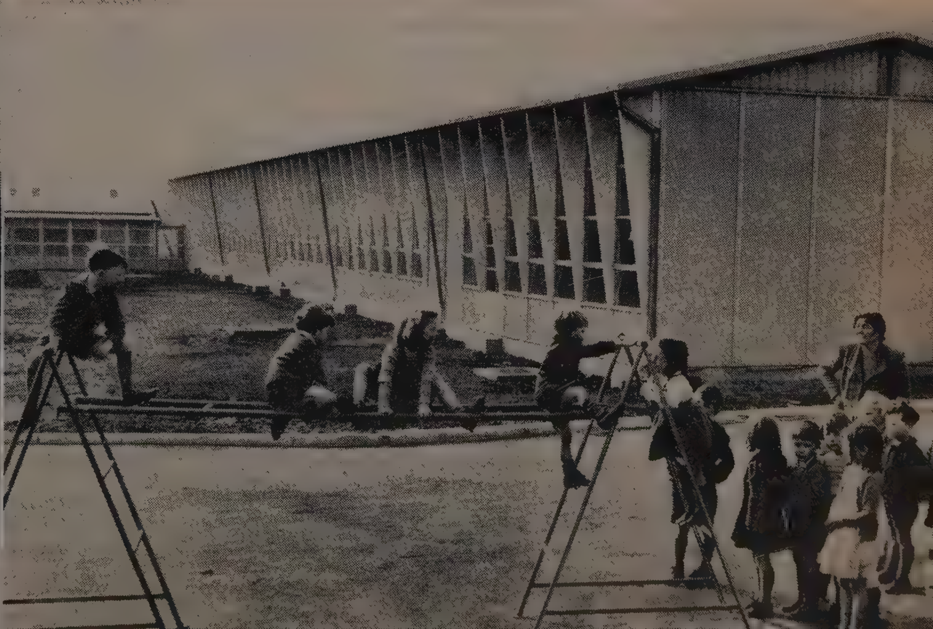
Signs were in evidence that the solid front of segregation was being breached. The universities of Kentucky and Texas admitted Negroes for the first time in their history. A Negro, Wesley A. Brown, became the first of his race to receive a commission as ensign at the United States Naval academy. Dr.

Left: CANADIAN STUDENTS at Bouvigne castle near Breda, Netherlands, in 1949, where they participated in a second international summer seminar organized by the Canadian Committee of the International Students' service

Below: EXPERIMENTAL PROJECT at the Hunter college model school for exceptional children in N.Y., in 1949, where youngsters aged 4 to 11 were typing their lessons. Reportedly, the children learned typing faster than most adults and found the device helpful in improving their spelling

low: TEACHERS from France, Belgium, the
etherlands, Luxembourg and the United Kingdom
rolled in a course on Western Union (western
uropean union) opened at Ashridge college, Berk-
mpstead, England, in 1949. The group shown
low were discussing the influence of language
western European culture

Below: FIRST PREFABRICATED ALUMINUM SCHOOLHOUSE in England, opened at Lockleaze, Bristol, March 9, 1949. In April, manufacturers of the building erected one at Neuilly, France, in 30 hr., to demonstrate the speed with which new schools could be set up



Harold L. Trigg, president of St. Augustine's college, Raleigh, N.C., was the first Negro appointee to the state board of education of North Carolina. Mrs. Mary McLeod Bethune was awarded a doctor of humanities degree by Rollins college, Winter Park, Fla., probably the first instance of the conferment of an honorary degree upon a Negro by a southern institution. The trend during 1949 was for the admission of increasing numbers of Negro students to fraternities which had hitherto barred them. Thus, despite the revocation of its charter by the national fraternity body for having pledged a Negro student in 1948, Phi Kappa Psi of Amherst college did not change its stand. Captain Levi Jackson of Yale university's football team received invitations to join three fraternities. White students in several colleges voted in favour of admitting Negroes to their respective institutions and social clubs. Of great importance to interracial relations was the decision by the National Interfraternity council to discontinue policies of racial bias in college fraternities. Also of significance in this respect was the action by the American Association of University Women in June to admit Negroes to membership. On the other hand, an effort by some congressmen to pass a law abolishing the segregation of the races in the public school system of the District of Columbia was successfully opposed by representatives of the southern states.

There was little doubt that the Negro schools had a long way to go to catch up with those of the rest of the population. The Southern Regional council revealed in January that a sum of $545,000,000 was necessary to improve Negro school buildings to the level of the white schools and that more money was required to equalize teachers' salaries and other school services.

In October a grant of $50,000,000 was made by George W. Armstrong, Sr., to the Jefferson Military college of Natchez, Miss., for the teaching of "the superiority of the Anglo-Saxon and Latin-American races." According to the terms of the donor, the college was to bar Negroes, Asiatics and Jews. Since the college refused to modify its charter, and in this decision it was supported by many persons and groups all over the country, Armstrong withdrew his offer and declared that he would apply the fund toward his struggle against "racial mongrelization."

The most important incident involving Catholics in education grew out of the denunciation in June by Cardinal Spellman of the Barden bill. After critical comment of the principle of federal-aid to sectarian schools was expressed by Mrs. Franklin D. Roosevelt in her newspaper column, the cardinal published a letter sent to Mrs. Roosevelt in which he took sharp issue with her point of view. His use of uncomplimentary terms toward Mrs. Roosevelt led to a lively exchange of opinion in the press by supporters—leading clergymen, educators, legislators and citizens of all faiths—of the two disputants. In spite of the later reconciliation of the overt differences between the cardinal and Mrs. Roosevelt, it was evident to objective observers that both federal aid to education and interfaith relations suffered damage during this debate.

Other events concerning Catholics in education included the following: the dismissal by a state court in New Mexico of 143 public school teachers of the Catholic faith for having allegedly taught Catholic doctrine in their classes in Dixon, N.M.; the dismissal of four faculty members of Boston college, which is controlled by the Jesuits, for their disapproval of what they described as the institution's heretical teachings, that is, the possibility of salvation outside the Catholic Church; frequent debates in the press between Catholic and Protestant clergy and educators; the resolution by the National Catholic Educational association for federal aid to parochial schools; and the ruling by Francis T. Spalding, commissioner of education in New York state, upholding the removal by the New York city boar of education of *The Nation,* a weekly accused of containin articles criticizing Catholicism, from the libraries of the hig schools.

Communism.—In January three professors were dismisse by the University of Washington, Seattle, Wash., on account c alleged membership in the Communist party. Despite a petitio by 150 professors and college officials to reinstate the dismisse faculty members in the interest of academic freedom, the un versity did not rescind its action. Support for the dismiss came from educators and from members of congress.

The committee on un-American activities of the house c representatives attempted in June to secure lists of college tex books to see if Communist ideas were being spread, but desiste after opposition by college presidents and congressmen. Th New York state supreme court declared unconstitutional November the Feinberg law, which directed school boards dismiss Communist and other subversive teachers. Loyalt oaths were opposed by the faculty and officers of the Universit of California, where the board of regents wished to impose the upon the staff. Presidents Eisenhower of Columbia and Cona of Harvard university were among the many university exec tives who denounced the imposition of loyalty oaths. The test mony of Chancellor Robert M. Hutchins (*q.v.*) of the Unive sity of Chicago was instrumental in disproving the charges subversive teachings and activities by his faculty which we made before the Seditious Activities Investigation commissi of the state of Illinois.

During the year, the matter of employing Communists teachers in schools and colleges was widely debated. Taking t negative were Commissioner McGrath, President Eisenhow Chancellor Harry W. Chase of New York university and oth prominent educators. Among those who believed that Co munists should not be banned as teachers were such liberal a conservative educational leaders as John Dewey, Chancell Hutchins and I. L. Kandel, editor of *School and Society.* T same cleavage was evident between the report of the N.E.A Educational Policies commission, "American Education and I ternational Tensions," and that of the American Association University Professors. The press stressed the former doc ment's suggestions that Communism be taught and that Co munists should not be allowed to teach. The A.A.U.P. co tended that the Communist party was a legal body and th its members have therefore a right to academic appointmen

International Educational Relations.—According to a ce sus by the Institute of International Education in April, the was a total of 26,759 foreign students, representing 151 natio and 152 religions, in 1,115 colleges and technical schools in states. This enrolment exceeded that of 1948 by more th 5,000 and that for the previous year by more than 10,000. T department of the army brought 193 students from occup countries, 115 of whom came from Germany, in accorda with its democratic re-education program. Public law 2 passed by Congress in August, provided that Finland's futu payments on its debt incurred during World War I should applied for "educational and technical instruction in the Unit States for citizens of Finland" and for similar purposes. Pu law 327, passed in October, set aside $4,000,000 for the tuit and expenses of Chinese students stranded in the United Sta because of the civil war in China. Changes were made in administration of the program of graduate scholarships un the Fulbright act. Henceforth U.S. applicants were to be chos by a decentralized procedure, the initial screening to be p formed by the individual colleges. In all, 614 U.S. gradu students obtained grants to study in foreign countries under Fulbright program during 1949–50.

The United Nations Educational, Scientific and Cultural or- nization (U.N.E.S.C.O.) increased its activities during the ear. A budget of $8,000,000 was approved by 271 delegates om 47 of the 50 member states at the fourth annual general onference which met in September and October in Paris. The onference also decided to co-operate in the program of aid to nderdeveloped countries to be set up by the United Nations. the face of strong protests by delegates from eastern Europe, e conference approved the extension of U.N.E.S.C.O. activi- es to Germany, as well as to Japan. The other significant de- elopments included the following: the admission of Israel and akistan as members; the release to radio stations throughout e world of "UNESCO World Review," a weekly program of ews concerning all fields covered by the organization; the or- nization of international educational missions to combat illit- racy and to improve educational conditions in the Philippines, hailand, and Afghanistan; the publication of new educational eriodicals such as the *Quarterly Bulletin of Fundamental Edu- ation;* the issuance, together with the International Bureau of ducation, of the *International Yearbook of Education for 948;* the organization, again with the International Bureau of ducation, of the 12th International Conference on Public ducation which met during July at Geneva, Switz., to explore e possibilities of teaching science, geography, and reading; the onvocation in June of an international conference on adult ducation at Elsinore, Den.; the award of 52 scholarships to ake it possible for citizens of 17 countries to study in the niversities of 7 member nations; the arranging of international egional conferences on illiteracy in Brazil and India; and the rganization of a National commission for U.N.E.S.C.O. in ndia, the 35th of such national bodies. Many schools, colleges nd miscellaneous groups organized assemblies, seminars, and ourses on the work of U.N.E.S.C.O. and of the United Nations. he Cleveland conference of the United States National com- ission for U.N.E.S.C.O., which took place in March and April, as marked by an attendance of 9,000 and by an address by aime Torres Bodet, the new director-general of U.N.E.S.C.O.

Education in Other Countries.—The reports concerning lucational developments in occupied Germany were conflicting uring the year. Despite the optimism of John J. McCloy, gh commissioner of the U.S. zone in Germany, with regard to e German people's abandonment of militarist and nazi ideals, ere was abundant evidence compiled by competent newspaper orrespondents, that the U.S. attempts at teaching democracy ere of little or no avail. Nazis were reported once more in ey positions in all fields, including the schools. Dr. Alonzo G. race, who resigned in October as director of the educational nd cultural relations division of the high commission, declared at an educational program of 20 years was necessary to de- ocratize the Germans. Other events of interest were the con- rence on comparative education at Chiemsee, Bavaria, Ger., e appointment of James Read to succeed Dr. Grace, the open- g of an Institute of American Affairs at Munich, and the nding of 618 German specialists to the United States to ob- rve democratic procedures in their respective fields.

Reports of education in Japan appeared to be more prom- ing. The national diet made the functions of the ministry of lucation advisory rather than administrative. A total of 6,000 apanese university students joined the member groups of the ational U.N.E.S.C.O. student council of Japan to further inter- ational understanding and co-operation. Adult education was ostered by the Japanese government and by labour unions. A gnificant development was the quiet purge by Japanese gov- nmental agencies of Communist educational personnel.

The process of communizing education and all other aspects cultural and intellectual life went on with renewed vigour in the U.S.S.R. The watchword in education was nationalism, while scholars in various learned disciplines were forced to adopt the current Communist, that is Stalinist, ideology in place of the beliefs they had formerly held. The influence of soviet educational ideals and methods was very profound during 1949 on such satellite nations as Czechoslovakia, Hungary, Rumania and Poland and Communist-dominated China. The only resistance to the communization of the countries behind the "iron curtain" seemed to come from the Catholic Church in Czechoslovakia. Apart from these efforts, the soviet campaign of transforming its neighbours into ideological confederates in the "cold war" was apparently running with smoothness and precision.

On the basis of a survey of 14 nations, Benjamin Fine of the *New York Times* claimed in November that educational facilities in all countries save Greece, Italy, Norway and Finland had attained prewar standards. Another incident of note was the opening of a co-educational divinity school in Turkey, testifying to the new attitude of the government to the propagation of the Moslem faith. (*See* also BLIND, EDUCATION OF THE; CHILD WELFARE; LIBRARIES; MOTION PICTURES; for statistics of institutions *see* UNIVERSITIES AND COLLEGES.) (W. W. BN.)

Canada.—Educational problems in Canada were highlighted during the year by several pleas for federal intervention in a field which the 1867 constitution had specifically relegated to the provinces. The pleas came from: (1) the Canadian Teachers' federation, which presented the federal government with a brief asking for amendments to income-tax legislation affecting teachers, for assurances that the provincial governments collect enough taxes to meet their educational responsibilities and for additional supplementary federal grants for education; (2) the Canadian Education association, which said that increasing federal grants to encourage research, training in agriculture and vocational training were necessary trends; (3) the National Conference of Universities, which stated that rising costs and dropping revenues were jeopardizing smaller institutions and pleaded for direct annual grants to medical, dental, forestry and agricultural faculties; (4) the Provincial Association of Protestant Teachers of Quebec, which asked for federal help with capital expenditures in the educational field. The question of the way in which the federal treasury might or should directly subsidize education was broadly discussed in the house of commons and the prime minister asked that consideration of the problem be postponed until the royal commission on arts, letters and sciences reported. During the year the commission had heard briefs from educational organizations.

Reports presented at the 12th annual meeting of the Vocational Training Advisory council indicated that training of veterans was practically ended, that full-time pre-employment training of apprentices had started in Nova Scotia and New Brunswick, that classes for unemployed workers had opened in Manitoba and British Columbia and had been extended elsewhere and that youth training courses had been expanded to include nurses' aids. (C. CY.)

Great Britain.—In June the minister of education for England and Wales publicly expressed his belief that "in the perspective of educational history 1949 will be regarded as the end of one period (*i.e.*, the transition from war to peace conditions) and the beginning of another." High standards had been restored in the schools, sufficient teachers were being trained, school building was rapidly increasing and the further education and training scheme had fed out into industry, commerce and the professions 75,000 well-qualified young men and women.

Two inquiries by teachers' associations increased the grave fears already felt in grammar secondary schools about the acute shortage of well-qualified teachers of science and mathematics.

In February the Central Advisory Council for Education (Wales) issued its first full report, *The Future of Secondary Education in Wales*. This proposed two types of organization: single multilateral schools covering a wide range of ability, and a dual system of grammar-technical schools for more intelligent pupils and modern-technical schools for the less intelligent.

In January the Scottish education department announced that after 1949 the senior leaving certificate (taken normally at the end of a five-year secondary school course) would be awarded on a subject and no longer on a group basis. From 1950 candidates would be required to follow a course of study approved by the department but the school would decide how many subjects each took.

In October new regulations for entrance to the teaching profession ended the system whereby prospective women teachers could do the first of three years' training in a secondary school. For entrance as a nongraduate any candidate must in future have a leaving certificate showing five passes, including English and one other subject at the higher grade.

Australia.—The large-scale immigration by which 250,000 people were expected to arrive in Australia from the United Kingdom and Europe between Jan. 1949 and June 1950 presented the education authorities with many problems including that of teaching English to foreigners. Schools were established for children and adults at all the numerous immigrant reception centres and methods were devised for the teaching of English to foreign immigrants, especially Russians and Balts, whose languages were virtually unknown in Australia.

South Africa.—In March the government appointed a commission "to formulate the principles and purposes of education for natives as an independent race . . . examine means by which all educational processes for natives . . . need to be changed . . . to fit in with the aforementioned basic principles . . . suggest methods of organization and administration for . . . native education, and recommend the basis on which the system should be financed."

FILMS OF 1949.—*Describing an Incident; Improve Your Handwriting; Improve Your Pronunciation; Making Sense With Sentences; Making The Most of School; Watch That Quotation; Why Study Foreign Languages?; Writing Better Business Letters* (Coronet Instructional Films); *Scottish Universities* (British Information Services); *Speech Series* (3 films) (Young America Films Inc.); *The Film and You; Who Will Teach Your Child?* (National Film Board of Canada); *Understanding Children's Play* (Educational Film Library Association, Inc.). (H. C. D.)

Education, Religious: *see* RELIGIOUS EDUCATION.
Education, U.S. Office of: *see* EDUCATION; FEDERAL SECURITY AGENCY.

Eggs. Eggs in amounts 25% above prewar continued to be substituted for the more expensive high-protein meats in the food supply of the United States in 1949. Production on farms was estimated at more than 55,600,000,000 eggs for the year. In 1948, 55,168,000,000 eggs were produced, and only 39,695,000,000 in 1940. Civilian consumption was 374 eggs per capita, compared with 386 eggs per capita in 1948, and a record of 397 eggs per person in 1945.

The number of hens and pullets on farms on Jan. 1 was 413,000,000 head, against 426,000,000 head a year earlier, but in November the nation's laying flock averaged 378,879,000 head, 4% more than November 1948 and 6% above average. The average rate of lay per hen for the first 11 mo. was 154 eggs, compared with 152 for 1948. The egg-feed price ratio was less favourable than a year earlier.

In Dec. 1949 the average price to the farmer was 40.5 cents per dozen, against 52.8 cents a year earlier. The enlarged production plus less than usual commercial storage put the burden of price support on the Commodity Credit corporation (CCC). This support level for 1949, at 90% of parity, was a nationa average farm price of approximately 45 cents per dozen. Th method of support was that of purchasing dried eggs; net pur chases Jan. through Oct. 1949 were 58,900,000 lb., and inven tories, including some 1948 stocks, valued at about $1.25 pe pound, were 69,000,000 lb. near the end of the year. It wa announced by the department that the support program in 1950 under the Agricultural act of 1949, would attempt to maintai the national average annual farm price at 37 cents per dozen or 75% of modernized parity.

Exports of eggs in 1948–49, in spite of large government acquired stocks, declined sharply to 89,000,000 lb. from 326, 000,000 lb. (shell equivalent) in 1947–48. Comparable figures for earlier years were 536,000,000 lb. in 1946–47, 608,000,00 lb. in 1945–46, but only 3,000,000 lb. average prewar. Storage stocks of shell and frozen eggs late in 1949 were the lowest on record, not much more than half as large as a year earlier Dried egg stocks, on the other hand, were almost four times those of the previous year.

Statistics on world egg production were inadequate but indi cations were that production reached its highest postwar leve during 1949 because feeds were more abundant and flocks ha been expanded, particularly in Europe. (J. K. R.)

Egypt. An independent kingdom of northeast Africa, Egyp is bounded N. by the Mediterranean, S. by the Anglo Egyptian Sudan, E. by Israel and the Red sea, W. by Cyrenaic and the Sahara. Area: 383,000 sq.mi., but the cultivated an settled area (the Nile valley, delta and oases) covers only 13, 496 sq.mi. Pop.: (March 26–27, 1947, census) 19,087,304; (mid 1948 est.) 19,528,000. Language: mainly Arabic. Religions Moslem 91.4%; Christian (mainly Copts) 8.19%; Jewish 0.4% Chief towns (pop., 1947 census): Cairo (cap., 2,100,506); Alex andria (925,081); Port Said (178,432); Tanta (139,965) Mahalla el Kubra (115,509); Suez (108,250); Mansura (102 709). Ruler: King Farouk I (*q.v.*); prime ministers in 194 Ibrahim Abdul Hadi Pasha and (from July 25) Hussei Sirry Pasha.

History.—The year 1949 began ominously under the shado of the assassination on Dec. 28, 1948, of Mahmoud Fahmy e Nokrashy Pasha, the prime minister. The murderer claimed t be a member of the fanatical Moslem brotherhood, whose leade Sheikh Hassan el-Banna, was himself assassinated in Feb. 194

The king appointed Ibrahim Abdul Hadi Pasha, who was the holding the office of minister of finance, to be prime ministe The new premier, an Independent in politics, added several In dependents to the existing cabinet of Liberals and Saadists. O Feb. 27 Ahmed Mohamed Khashaba Pasha became minister foreign affairs.

The government's first task was to restore the situation whi had arisen from Egypt's participation in the unsuccessful i tervention of the Arab league in the affairs of Palestine. Alrea the state of Israel was recognized *de facto* by the most powerf states in the world—although not by any important orient power. On Feb. 3, Egypt, following a Pakistani example, d nounced these recognitions which, it was claimed, implied t acceptance of the rule of force.

At the beginning of the year, Egyptian military and nav forces were still in contact with the Israelis and the latter h achieved several penetrations into Egyptian territory. Howeve the acting mediator, R. J. Bunche (*q.v.*) announced a cease f as from Jan. 7, which was followed by armistice negotiatio under his chairmanship. These were successfully concluded an agreement signed on Feb. 24. This provided for the evacu tion of El Faluja, by Egyptian, and of Bir Asluj, by Isra forces, with a demarcation line between the two rival armies

MPLE OF AMON at Karnak, undergoing restoration by the Egyptian gov-
ment's department of antiquities in 1949. Rebuilding of the ancient
ple, a major attraction for tourists, meant identifying and reassembling
hundreds of stone blocks fallen from the original structure

Negeb, which, running about 20 mi. south of Tel Aviv, left
za in Egyptian and Beersheba in Israeli hands. Provision was
made for the limitation of the armed forces to be main-
ned by either party in the area.

n April, Husni ez-Zaim, then head of government of Syria,
v to Cairo for talks with King Farouk, which were followed,
his part, by the declaration, satisfactory to Egyptian leaders,
t he was opposed to any plan for a Greater Syria, and, on
part of the Egyptian government, by the recognition of his
ime on April 23.

On March 7, after long negotiations, a new agreement was
ncluded between the Egyptian government and the Suez
nal company. By this, Egypt was to receive a much increased
re in the profits of the company and to acquire, by 1964, five
ditional seats on the board of directors, bringing its total
resentation up to seven. Large constructional works were to
undertaken which would eventually allow the passage of 60,
tead of the present 35, ships a day through the canal. This
reement was to hold good until the expiry of the existing con-
sion in Nov. 1968.

An agreement was announced by the British foreign secretary
May, whereby Egypt was to participate (sharing on the basis
£4,500,000 and £7,500,000 respectively with Uganda) in the
t of a project to raise the level of Lake Victoria, at the head-
ters of the White Nile, thereby providing power for the in-
strialization of Uganda and a greatly increased flow of water
Egypt.

n June Egyptians celebrated the closing, in accordance with
terms of the Montreux convention, of the mixed courts, the
vestige of the Ottoman regime of capitulations which had
g been regarded as a privilege allowing Europeans to evade
ective subjection to Egyptian justice. Similarly the foreign
sular courts closed down on Oct. 14.

On July 25 the government of Ibrahim Abdul Hadi Pasha resigned, chiefly, it was understood, because of a dispute between the Saadist and Liberal parties as to the distribution of seats at the forthcoming election. On the same day King Farouk appointed Hussein Sirry Pasha to form an all-party caretaker coalition government. It was then announced that elections would take place in October and that they would be held under full constitutional guarantees. Circumstances, however, necessitated a change in this plan.

On Nov. 3, unable to obtain agreement of the political parties to the draft scheme for the redistribution of constituencies, Sirry Pasha resigned. Entrusted at once by the king with the formation of a new government, he accomplished this task on the same day. His new cabinet was composed of nonparty men whose tasks were clearly those of routine administration, the delimitation of constituencies and the conduct of elections expected to be held in Jan. 1950. (H. S. D.)

Education.—(1945–46) Schools: primary 425, pupils 82,161; elementary 4,035, pupils 730,039; secondary 141, pupils 62,445; technical 47, pupils 12,464. Universities (1948–49) 5, students 12,540 (excluding Farouk university, Alexandria, and el-Azhar university, Cairo), professors and lecturers 719 (excluding el-Azhar university); other institutions of higher education 8. Illiteracy (1937): 85.2% (excluding nomadic population).

Finance and Banking.—Budget: (1948–49 est.) revenue £E141,500,000, expenditure £E183,400,000; (1949–50 est.) revenue £E147,100,000, expenditure £E188,000,000. National debt (Nov. 1949) £E116,000,000; currency circulation (July, 1949) £E141,000,000. Gold reserve (July 1949) U.S. $53,000,000. Bank deposits (May 1949) £E224,000,000. Monetary unit: Egyptian pound with an exchange rate Nov. 15, 1949, of $2.87 U.S.

Foreign Trade.—Imports: (1948) £E160,300,000; (1949 six months) £E88,100,000. Exports: (1948) £E143,100,000; (1949, six months) £E73,600,000.

Transport and Communications.—Roads (1947): 8,874 mi. Licensed motor vehicles (Dec. 1948): cars 37,890, commercial vehicles 11,800. State railways (1948): 3,109 mi.; passengers carried 51,052,000; goods traffic 8,345,000 tons. Shipping (July 1948): number of merchant vessels of 100 tons and upward 50, total tonnage 83,073. Telephones (1947): subscribers 99,814.

Agriculture.—Main crops (in metric tons, 1948): cotton, ginned, 386,000; maize 1,409,000; wheat 1,080,000; rice 1,308,000; onions 195,000; sugar, raw, 200,000. Livestock: sheep (July 1947) 1,868,000; goats (July 1947) 1,474,000; cattle (July 1947) 1,318,000; buffaloes (July 1947) 1,239,000; asses (July 1947) 1,125,000; camels (Jan. 1945) 162,000; horses (July 1947) 25,000; chickens (July 1947) 16,294,000. Fisheries: approximate annual catch 53,000 metric tons; value £E2,000,000.

Industry.—(1945) Industrial establishments 129,231, persons employed 458,000. Crude oil (in metric tons, 1948): 1,887,000. Raw materials (1948): phosphate rock 377,000 metric tons; manganese ore 60,000 metric tons. Manufactured goods: cotton yarn (1948) 32,970,000 metric tons; cotton piece goods (1948) 154,800,000 sq.m.; cement (1948) 768,000 metric tons.

Einstein, Albert (1879–), German-born physicist, was born March 14 in Ulm, Württemberg. (For his early career *see* the *Encyclopædia Britannica.*) As a Jew, in the early 1930s he came under fire of Hitler's anti-Semitism and was forced to leave Germany. He spent some time in England and then, in 1933, went to the U.S. as professor of mathematics at the Institute for Advanced Study in Princeton, N.J. It was his memorandum to Pres. F. D. Roosevelt, that the Germans were reputedly attempting to utilize in warfare the explosive energy of the atomic nuclei, that set the U.S. on the road to the development of the atomic bomb.

Late in Dec. 1949 the Princeton University Press announced that Einstein had produced a new theory, "the generalized theory of gravitation," which by four mathematical equations sought to unify the basic theories of gravitation and electromagnetism and to show that they are different aspects of the same force. Einstein described this theory as an extension of his theory of relativity, and conceded that it would be difficult to test it experimentally.

Eire: *see* IRELAND, REPUBLIC OF.

Eisenhower, Dwight D. (1890–), U.S. army officer and university president, was born on Oct. 14 in Denison, Tex. He was graduated from the U.S. Military academy at West Point, N.Y., in 1915, and during World War I served as an instructor, camp commander and commander of tank troops. He was graduated later from the Army War college and the Army Industrial college, served in the office of the chief of staff at Washington, D.C., and in 1935 saw duty in the Philippines as chief of staff to Gen. Douglas MacArthur. In June 1942 he was given command of the U.S. headquarters in England. He was commanding general of the Allied armies that conquered North Africa and Sicily (1943), invaded Italy (1943), landed in France (1944) and completed the conquest of Germany from the west in 1945. He was made commander of U.S. occupation forces in Germany in 1945 and chief of staff Nov. 20, 1945, retiring from that post Feb. 7, 1948, to become president of Columbia university.

Repeatedly before the presidential campaigns of 1948 Eisenhower was strongly mentioned by both Republican and Democratic spokesmen as a possible candidate, but he refused to stand for the nomination. In Feb. 1949 he took several months' leave from Columbia to serve as temporary presiding officer, without a vote, of the joint chiefs of staff. On March 3 in a New York city address he urged the strengthening of the authority of the secretary of defense, declaring "an entrenched bureaucracy" was hindering true unification of the armed forces. In an address in St. Louis, Mo., in September, Eisenhower expressed as his political philosophy a course "down the middle of the road between the unfettered power of concentrated wealth . . . and the unbridled power of statism."

Elections. The Republican party fared so poorly in numerous off-year elections in 1949 that prominent Democratic spokesmen, including President Truman and House Speaker Sam Rayburn, expressed mock fear over prospects of the disappearance of the two-party system in the United States. The Nov. 8 debacle in scattered but important contests meant that, with the exception of the recapture of congress in 1946, the G.O.P. had not scored a major sweep since 1928.

The most significant test took place in New York state, where former Governor Herbert H. Lehman opposed John Foster Dulles for the seat held by the latter since the resignation of Robert F. Wagner. Dulles, a Wall street lawyer and former U.S. delegate to the United Nations, had been appointed to the senate post by Gov. Thomas E. Dewey. With President Truman and several cabinet members pleading for Lehman and with Governor Dewey campaigning actively for Dulles, this election brought the 1948 presidential rivals face to face again.

Dulles raised the issue of "statism," which was his description of the "Truman welfare state." It was the first time that a Republican candidate for such high office had taken such a definite stand against the New Deal-Fair Deal system of government. Lehman endorsed the White House program, although he entertained reservations toward President Truman's national health insurance scheme and the two-price Brannan farm formula.

The vote was 2,573,934 for Lehman and 2,377,641 for Dulles, giving the Democrat a plurality of 196,293. The American Liberal party contributed more than 400,000 votes to the Lehman total, and he would have lost without this reinforcement. Moreover, a Democratic candidate for a state-wide judicial office topped the Lehman plurality by more than 200,000. Lehman also benefited from the fact that the American Labor party, Henry A. Wallace's alleged pro-Moscow organization, did not enter a candidate in the senatorial contest. In view of these facts, Republicans comforted themselves with the thought that Dulles had made a good run under difficult circumstances.

Democratic Mayor William O'Dwyer was re-elected mayor of New York city by 308,430. His opponents were Newbold M ris, who had the nomination of the Republican, Liberal a Fusion organizations, and Rep. Vito Marcantonio, who carri the banner of the American Labor party. The G.O.P. plac only 1 man on the new 25-man city council, and he had to ha the help of the American Liberal and Labor parties to g elected. The only other Republican winner in New York ci was a candidate for a place on the Manhattan municipal cou

Across the Hudson river in New Jersey, the Republicans r elected Gov. Alfred E. Driscoll over former State Sen. Elmer Wene by 75,860. A Democratic revolt against "Boss" Fra Hague in Jersey City kept Wene's plurality there down 1,550, whereas this area normally turns out a lead of fro 70,000 to 100,000 for any Hague entry. Thus Driscoll was r elected by disaffected Democrats; he needed their support b cause he lost ten normally Republican counties in south Jerse

The most exciting and politically significant special congre sional election in 1949 was staged in the 20th district of Ne York's upper west side, for it brought another Roosevelt, Fran lin D., Jr., onto the national political stage. When Tamma denied him the regular Democratic nomination, he ran as t candidate of the Liberal and Four Freedoms parties. Fr morning to midnight he toured the district.

He rolled up 41,146 votes as compared with 24,252 for t Tammany candidate, 10,026 for the Republican and 5,348 f the American Labor entry. Young Roosevelt's victory led mention of him as a possible candidate for the New Y governorship or the United States senate in 1950.

The Democrats won another special congressional election the 7th New York district, a heavily Democratic section Brooklyn. On Nov. 8 the Democrats won two more congr sional contests in the 10th New York and 5th California d tricts. The New York outcome had no special significance, the 10th had been a Democratic stronghold for decades.

In the California test a Democrat who also headed the st Federation of Labor won on a program pledging full support the Truman program. Although he replaced a veteran Repu can, Richard Welch, the latter had voted more often with Democrats than with his own party during the 23 years in house prior to his death.

The Republicans' only triumph in off-year congressional str gles in 1949 came in the 26th Pennsylvania district. Th John P. Saylor, the G.O.P. candidate, defeated Ethel M. Cof by 8,460 votes. Mrs. Coffey's son, a World War II flier, carried the district by 12,056 in 1948. He was killed in a pl crash early in 1949.

The congressional results made only a slight change in hou senate alignment. For the session opening on Jan. 3, 1950, senate line-up was 54 Democrats and 42 Republicans. In house it was 261 Democrats, 169 Republicans, 1 Ameri Labor party member, 1 Democratic-Liberal member an vacancies. On Jan. 3, 1949, it had been 262 Democrats, Republicans and 1 American Labor party member.

Old-time bosses did not do so well in 1949. Frank Hague control of Jersey City to the John V. Kenny faction in a sp election of city commissioners, and Hague failed to recou gaining control of the state government in the Driscoll-W struggle. He immediately resigned as vice-chairman of Democratic National committee, and his long career a national political power seemed ended.

In Boston the 74-year-old James Michael Curley, seeki fifth term as mayor, was defeated by City Clerk John B. Hy Hynes, an erstwhile member of the Curley machine, had a as mayor for five months in 1945 when Mayor Curley serving a federal prison sentence.

The Hague-Curley setbacks were attributed largely to olitical influence of women and ex-G.I. voters, who do not em to be unduly susceptible to machine domination. The 'Dwyer re-election was also considered to be an anti-organizaon demonstration, for he had been at odds with Tammany nce he took office.

In Detroit the forces of organized labour suffered a reverse. ity Treasurer Albert E. Cobo defeated George Edwards, presient of the local C.I.O. union, for the mayoralty by 115,110 otes. It was the fourth time in 12 years that the C.I.O. had ied and failed to elect its candidate to the Detroit city hall.

Thomas A. Burke, Democrat, was re-elected mayor of Clevend. His demonstration of popularity and strength was rerded as politically interesting because he had been mentioned a possible opponent of Sen. Robert A. Taft of Ohio in 1950.

Largely because of exposés of Republican officeholders' graft d inefficiency, the Democrats won four municipal offices in hiladelphia which they had never held in recent times. They ected David Lawrence, Democratic National committeeman r the state, as mayor of Pittsburgh. They also won a stateide judicial post by a 35,000 plurality, although in off-years e G.O.P. candidate had usually won by 200,000 to 300,000.

Several states voted on constitutional and legislative questions wide interest. Pennsylvania adopted a proposal for a bonus r World War II veterans to cost an estimated $500,000,000, a 3-to-1 favourable majority. New Jersey defeated a simr $105,000,000 scheme by a narrow margin.

Virginia and Texas defeated constitutional amendments that ould have outlawed the poll tax, as demanded by President ruman in his Civil Rights program before congress. These jections inspired a new drive for national legislation.

California surprised the nation by repealing year-old constitional amendments that had given exceptionally high pensions the aged. The voters raised the qualifying age for assistance om 63 to 65, boosted property restrictions and provided that age-earning relatives of indigents must take care of them, if ossible. It was an unusual sign of resistance to the pension rade in this state. The repeal had been fought bitterly by e Townsendites, the "ham-and-eggers" and the "twenty dolrs every week" clubs.

President Truman, who was making a political speech before emocratic women at Washington, D.C., as the state and unicipal returns rolled in on the night of Nov. 8, made no tempt to conceal his personal exultation. A few days later, told a press conference that the off-year results had inspired ore congratulatory messages to the White House than had his vn triumph over Dewey in 1948.

Democratic strategists considered that the 1949 election ends justified their acknowledged program of building future ccesses on an alliance of industrial workers and farmers, who d gained material advantages from the Roosevelt-Truman gime in the form of higher wages, farm parity payments, penons and welfare benefits.

President Truman indicated clearly that he regarded the Nov. outcome, especially the Lehman-Dulles figures, as general dorsement of his Fair Deal policies, or, as his opponents aracterized his program, his "welfare state." (*See* also Comunism; Democracy; Democratic Party; Republican arty; United States; and under various states and various untries of the world.) (R. Tu.)

ectrical Industries.

Indications that postwar expansion in the U.S. electrical industry was aring or had passed its peak appeared in 1949. Energy proiced for the public supply exceeded the output for 1948 by ly 2.9% as compared with a 10.1% increase the previous ar. Total output was 290,783,000,000 kw.hr., as compared with 282,698,000,000 kw.hr. in 1948. This increase of 8,085,000,000 kw.hr. compares with the previous year's increase of 26,959,000,000 kw.hr. To generate this output in 1949, the average kilowatt of hydro capacity produced at full tilt for more than 63 hr. out of every 100, while steam capacity produced for about 54 hr. out of every 100.

WEST GERMAN VOTERS at the polls in Frankfurt on Main on Aug. 14, 1949, during the first democratic elections in the country after 1933. Conservatives, led by the Christian Democratic Union party, won a majority of the seats in the lower house of the new west German parliament

Of the output increase of 8,085,000,000 kw.hr. in 1949, 6,815,000,000 kw.hr. were furnished by hydro power plants, raising the proportion of hydro power generation from less than 29% in 1948 to almost 31% in 1949, the fuel share in output thus declining from more than 71% to under 70%. This decrease in fuel power output lowered the consumption of coal, gas and oil from 130,000,000 to 123,000,000 tons of coal equivalent. Actual coal consumption in 1949 dropped to 87,300,000 tons, as against 99,590,000 tons in 1948, due in part to an increase in consumption of oil from 42,640,000 bbl. in 1948 to 58,950,000 bbl. in 1949 and an improved water supply for hydro generation.

As between outputs of power company and government-owned plants, the proportion of the total from the latter rose from 19.2% in 1948 to 20% in 1949.

Power Plant Capacity.—Net increase in generating capacity in 1949 up to Nov. 1 was 4,606,000 kw. bringing the total as of that date up to 61,166,000 kw. The actual increase in 1949 was slightly more than this, with some new machines being scheduled to go into operation in November and December. The reported new capacity installed in 1949, not all representing net increase, was 6,750,000 kw. Preliminary figures set the peak load at 54,300,000 kw. and indicated that the margin of safety would be about 12% or double that of 1948.

Ratios of fuel and hydro power, and of power company and government-owned generating capacity in the total remained little changed in 1949 from 1948. In the earlier year, fuel power was 72.2% and water power 27.8% of the total; in 1949 the ratios were 72.5% and 27.5%. In 1948, power companies and government divided ownership of generating capacities in the ratios of 80.8% and 19.2%; in 1949, the ratios were 80% and 20%.

Electricity Sales.—Electric utility customers bought 248,750,000,000 kw.hr. of energy in 1949, an increase of 8,010,000,000 kw.hr. over 1948, but the 1949 increase was considerably less than that of 1948 over 1947—23,000,000,000 kw.hr. Industrial usage was responsible for the slowing up of the increase rate. In 1948, large industrial customers bought 10,500,000,000 kw.hr. more than in 1947, but in 1949, their total usage dropped to 120,750,000,000 kw.hr., or 4,000,000,000 kw.hr. less than their 1948 consumption.

Sales to residential and rural customers, however, continued to grow. In 1949, sales to these customers were 65,925,000,000 kw.hr., about 8,600,000,000 more than in 1948, which, in turn, was about 6,000,000,000 more than in 1947. Average annual residential use of electricity rose from 1,563 kw.hr. in 1948 to 1,685 kw.hr. in 1949, an increase of 122 kw.hr.

Revenues.—Customers paid the electric utilites $4,611,000,000 in 1949, about $298,000,000 more than in 1948, a 6.9% increase. This was associated with a 3.3% increase in sales; it reflected a greater usage of energy at higher steps in rate, largely because of the increase in number of customers served. Average revenue from all customers in 1949 was 1.85 cents per kw.hr. as against 1.79 cents in 1948.

Residential customers, however, had a decrease in the unit price they paid for electricity, 2.96 cents in 1949, as against 3.01 cents in 1948. Because of their greater use of electricity, these customers paid an average annual bill of $49.88, $2.83 more than in 1948. The 1949 increase of 122 kw.hr. in usage cost the average consumer only 2.32 cents per kw.hr.

Users.—The number of customers served in 1949 grew to a total of 42,836,000, an increase of 2,114,000 over 1948. The largest increase was in the residential class, which added 1,928,000 new customers for a total of 37,172,000. It was perhaps significant that industrial and commercial customers showed only modest increases, less than the previous postwar years.

The number of people in homes served by electricity in 1949 was about 137,500,000 or approximately 95% of the total population.

Financial.—The most noteworthy facet of electric utility financing in 1949 was the successful accomplishment of the largest financing program ever undertaken in any one year by the electric companies. New capital entering the business in 1949 was $1,445,000,000 as compared with $1,314,000,000 in 1948 and $576,000,000 in 1947. Refunding operations rose to $34 000,000 in 1949, an increase of $212,000,000 over 1948, but decrease of $661,000,000 over 1947. The total financing in 19 was thus $1,793,000,000 or about $342,000,000 more than 1948.

The share of the revenue dollar available for dividends ar surplus rose in 1949 due to increased revenues and high operating efficiencies. In 1947, the proportion was 18.2 cent in 1948 it dipped to 16.7 cents; in 1949 it increased to 18 cents. The gross operating revenue of power companies ro from $3,903,000,000 in 1948 to $4,150,000,000 in 1949, an i crease of $247,000,000. Money left for net income in 1949 wa $778,000,000, which amount was $108,000,000 greater than th net income reported in 1948.

Electrical Manufacturing.—In 1949, the Federal Reser board index of general industrial production dropped to 203, points below 1948 and 2 points below 1947. The electrical pr duction index dropped to 429, 48 points below 1948 and on 14 points above 1947. Following a distinct slowing-up of pr duction in 1948, electrical goods for industrial installation co tinued to decline in 1949. Appliances for domestic use fell fro the record high of 1,040 in 1948 to 885 in 1949, while apparat for electricity supply systems declined less severely from 399 1948 to 383 in 1949. (*See* also PUBLIC UTILITIES; RURAL ELE TRIFICATION; TENNESSEE VALLEY AUTHORITY.) (F. J. K.)

Canada.—Total central electric station production for t first eight months of 1949 stood at 30,990,729,000 kw.hr., co pared with 29,867,671,000 kw.hr. for the same period of 194 The increased production was obtained from several new hyd electric and steam-generating installations, chiefly in Queb Ontario, Saskatchewan and British Columbia.

Canadian and United States engineers and government o cials studied the possibility of expanding the power-generati facilities of Niagara Falls and of Passamaquoddy tidal curren but no decisions were announced.

Because of the 1948 import restrictions on electrical par Canadian production of both domestic and commercial elect cal refrigerators and parts rose markedly in 1949. To bo sales of British electrical goods in Canada, in competition w similar Canadian-produced goods, the Canadian Standards as ciation set up approvals procedures for British electrical a allied manufacturers. (C. CY.)

Europe.—In Great Britain further study of tidal pow schemes was carried out and the construction of a model of t Severn estuary for experimental research was planned. Inve gations on the possibilities of wind power for electricity gene tion on a large scale made good progress, and preparations w made to install two 100-kw. wind-driven generators (one Orkney, by the North of Scotland Hydro-Electric board, a

GENERATING PLANT built at Croydon, Eng., in 1949, one of 38 new power stations scheduled for completion in Britain before 1954, under a plan to increase the national power supply by 40%

by the British Electricity authority), to gain operating ex- ience. The Hydro-Electric board, and also the ministry of l and power, sponsored research on the burning of peat in turbines for electricity generation.

Cable research was very active, particularly in the direction developing cables to work at alternating-current voltages of to 300 kv., for direct-current voltages of the order of 500 1,000 kv. and for submarine transmission of power over long tances. Arrangements were made to test a British 220-kv. le over a long term connected to the French 220-kv. network.

Generating Plant.—In Great Britain, steam turbogenerators public supply power stations were standardized at 30 or 60 gawatts, and the former was approximately the average size set in use. The installation of larger sets was becoming more nmon and this average appeared likely to rise during the next v years to between 40 and 50 kw. Walsall power station was cially opened on Sept. 30. It had then in operation two -megawatt sets but would have a total capacity of 180 megatts by 1952. In the same British Electricity authority divin two further new stations, one of 210 megawatts and the ier of 120 megawatts, were under construction.

Transmission and Distribution.—As an extension of the grid tem of the B.E.A., a 33-kv. submarine cable was laid across Solent from Gurnard, Isle of Wight, to Lepe, Hants. Of a al length of 2.9 mi. it was approximately 6 in. in diameter l weighed 132 lb. a yard. Another submarine cable (for teleone circuits) 80 mi. long was laid between eastern England l the Netherlands. Its main insulation was of telcothene, a v polythene-base insulating material which could withstand ° C.

Up to June 1949 the total of orders placed with British nsformer manufacturers during the past few years for transmers to operate at 200 kv. and over was 1,187,000 kilovoltperes in 18 installations. These included 120,000 kva. at kv. for the U.S.S.R. in 1942 and other groups at 220 kv. the Netherlands and Finland.

Utilization.—A railway electrification scheme for Brazil inved the manufacture by a British firm of fifteen 3,000-h.p., 00-v., direct-current, mixed-traffic locomotives. These were largest type ever manufactured in Britain and would be d on a 64-km. length of main line which was being electrid. One locomotive could haul a load of 600 tons at 45 m.p.h. the level or at 20 m.p.h. up a 2.5% gradient. At the dairy w at Olympia, London, in October, two makes of dairy sterers which were of the thermal storage type and thus folved the general trend of agricultural electrical equipment vard low electric loading and off-peak operation, were shown. rn hay-drying by cold air blowing and electric soil warming glasshouses was being adopted.

n Great Britain in April the restriction on electric lighting display purposes was removed until October. Fluorescent nting made further strides and was being extended to underound railway trains. An important development was the our-matching fluorescent tube. The specially developed light- equipment for the huge assembly hall, seven and one-half es in floor area, at Bristol in which the huge air transport ne Brabazon I was built, created much interest. At the unting height of 75 ft. above the floor high efficiency lamps ıld be used without risk of glare. A combination of 1,500-w. gsten filament and 400-w. mercury vapour discharge lamps s installed.

ILMS OF 1949.—*Energy in Our Rivers* (Coronet Instructional Films). (E. W. G.)

ectric Transportation.

Urban Transit Equipment.—At the beginning of 1949 ut 75% of all electric passenger transportation vehicles operated in the United States were in the cities of more than 500,000 population. On the other hand, only about one-third of the motorbuses used for urban transit service were operated in these areas, the great majority being in the smaller communities. Of the total volume of riding in the large cities, about 70% was being handled by electric vehicles and 30% by motorbuses. In the smaller communities the situation was almost exactly the reverse, electric transportation handling 28% of the volume and motorbuses 72%.

HIGH-VOLTAGE engineering laboratory of the General Electric Co., opened at Pittsfield, Mass., June 23, 1949. Described as "the world's largest man-made lightning centre," it was designed for basic research into effects of lightning on power transmission lines and other related problems

Additions of equipment during the year emphasized this trend toward concentration of electric transportation in the large cities. No new electric rail cars were ordered for operation in the smaller cities. About 700 new rapid transit cars, which were put in service in New York city, represented an important step in modernization. Several hundred streetcars of the presidents' conference committee type ordered in 1948 were placed in service in various large cities during 1949. This, too, represented an important step in electric transportation modernization. In addition about 200 new cars of the same type were ordered for Detroit, Mich., and St. Louis, Mo.

Electric trolley coach operations were substantially expanded during 1949, the total number of such vehicles in service in the United States increasing to approximately 6,000. About half of the trolley coaches added during the year were for operation in cities of more than 500,000 population, notably Philadelphia, Detroit, Cleveland, Boston, and San Francisco, the remainder of the new trolley coaches were mainly for cities of between 250,000 and 500,000 population.

For the most part the new trolley coach operations inaugurated in 1949 were replacements of streetcar lines. Detroit, however, replaced a motorbus line by an electric trolley coach line.

Traffic Trends.—The total number of passengers carried by electric transportation in 1949 showed a decline estimated at about 10% from the previous year's total of 10,600,000,000. Numerous increases in rates of fare were necessitated by increases in operating costs, especially wages. These probably resulted in some loss of riding but statistics were not available to show the exact effect on the number of passengers carried. Despite the decrease which occurred during the year the total volume of electric transportation riding in the United States remained above the level of 10 years before.

On the street railway lines the decrease in riding was accentuated slightly by the substitution of other types of vehicles in place of electric rail cars on a number of lines in Chicago, Cleveland, San Francisco and elsewhere. Figures issued by the management of the rapid transit lines in New York city indicated an increase in the average fare paid from 5 cents to 8.73 cents, which produced an increase of 55% in gross revenue, accompanied by an 11% decrease in the number of passengers carried. While part of this decrease was the result of general business conditions, the higher fare was undoubtedly a factor.

Trolley coach operation was the only type of electric transportation which registered a gain in patronage during 1949, reaching an all-time peak of about 1,750,000,000 passengers carried. This was largely the result of the great expansion of these operations during 1948 when more than 1,400 new trolley coaches were put in service.

Finances.—Because of the co-ordinated operation of electric and motorbus service by a large number of companies it is impracticable to derive separate figures for the financial results of electric transportation. It may be said in a general way, however, that fare increases in recent years had enabled the electric transportation industry to keep gross operating revenue fairly stable despite some decline in the volume of business. Operating expenses, however, had mounted steadily, so that each of the past several years had witnessed a drop in net revenue. This situation was a cause of considerable concern within the industry.

Heavy Electric Traction.—Modernization of equipment for commuter service was the outstanding development of the year 1949 in the field of heavy electric traction. Orders were placed by the New York Central railroad for 100 new four-motor multiple-unit cars for operation on its 600-v. direct-current electrified line between Harmon and Grand Central terminal. These new cars were to have tight lock couplers and electromagnetic brakes, wide windows, a three-two seat arrangement and were to be air-conditioned. They were designed for speeds up to 75 m.p.h. The Pennsylvania railroad also ordered 100 new four-motor multiple-unit cars. These were to be used on its suburban 11,000-v. alternating-current electrified lines operating out of Philadelphia. The Reading railroad ordered 10 cars for its Philadelphia electrified lines and the Long Island railroad ordered 50 double-deck multiple-unit cars.

Another significant development in heavy electric traction was signalized by the Pennsylvania railroad's order for four 5,000-h.p. straight electric locomotives for operation under an 11,000-v. single-phase A.C. trolley wire. Each locomotive was to consist of two cabs. Various running gear arrangements were to be employed. Two of the locomotives were to be equipped with four simple, swing-bolster, two-axle swivel trucks having 48-in. wheels and a loading of 60,000 lb. per axle. One locomotive was to be equipped with six two-axle swivel trucks having 42-in. wheels and a loading of 45,000 lb. per axle. The fourth locomotive was to be equipped with four three-axle swivel trucks having 42-in. wheels and a loading of 45,000 lb. per axle. In each case, all axles were to be motored.

This design of locomotive was the result of a concerted effort on the part of builders and operators to obtain an electric freig locomotive having all weight on driving axles and using simp truck construction. It was expected that these new designs locomotive would enable the railroads to select the most ec nomical unit for moving heavy freight traffic at speeds on th order of 30 m.p.h. over ruling grades.

All of the heavy electric traction equipment ordered durin 1949 was to be operated on existing electrified lines. On minor extensions of existing electrifications were contemplat for the immediate future. (J. A. Mi.)

Canada.—The most significant development of 1949 w the widespread and persisting pressure for increased streetc fares. Typical increases granted included: Winnipeg, from tw tickets for 15 cents to three for 25 cents; Hamilton, from fo for 25 cents to four for 30 cents; Edmonton, from four for cents to three for 25 cents.

The Toronto Transportation commission, in its 1949 annu report which covered 1948, showed an all-time record for gro revenue of $25,000,000 and for passengers of 311,155,9 (3,000,000 more than 1947), on a basic fare of four tickets f 25 cents. In 1948 the commission spent $19,000,000 of reserves on 200 new streetcars (100 delivered in 1949), 3 buses, 85 trolley buses, plus $2,000,000 on preliminary wo for the Yonge street subway.

The trend to trolley buses continued. By the end of 194 13 major Canadian cities ran a total of 611 trolley buses, co pared with 67 such buses in 1945 (which were concentrated three cities); 122 additional trolley buses were on order f 1950 delivery. Montreal's electric transportation difficulti however, were not being entirely cured by trolley buses. Th in operation in 1945 had been expanded to 46 by 1949, but acute problem still remained on the high-density main rout of the metropolis. Late in the year the traffic research boa recommended a $180,000,000 subway, to be built in $20,000,0 sections.

Electric transportation statistics for Canada for the fi seven months of 1949, compared with the same 1948 period parentheses, were: urban revenues, $57,803,981 ($55,026,457 interurban revenues, $24,980,482 ($20,978,270); urban electr car mileage, 55,208,844 (62,702,202); urban trolley-bus milea 10,624,867 (6,295,834); interurban electric-car mileage, 3,62 885 (3,812,953). (C. Cy.)

Great Britain.—In Sept. 1949, the Central line of the Lo don Transport executive was extended from Loughton to Epp (five mi.). This administration placed orders for 90 surfa line cars of aluminum alloy in order to obtain comparative da of cost and performance and to secure a saving in energy co sumption. A weight reduction of 3.1 tons a car was anticipat

The working party appointed to review proposals for railw improvement put forward by the Railway (London Plan) co mittee published its report on railway construction and devel ment advocated in Greater London. The electrification of remaining steam-operated suburban services radiating fr London, except on the Western region, was proposed as far High Wycombe, Tring, Luton, Hitchin, Bishop's Stortford a Shoeburyness. Such services were to be continued diametrica across London in tubes taking full-sized rolling stock. Ac tional normal-sized tubes (12-ft. diameter) would be construc both on new routes and as extensions to existing routes.

Austria.—Electrification in Austria benefited from Mars aid. Electric working was introduced in May 1949, on Attnang Puchheim-Linz section (34 mi.) bringing the total el trified mileage up to 342 mi. on the main line between Vier and Buchs on the Swiss frontier. Another hydro station under construction at Kaprun to supply power for the exist Innsbruck-Bregenz line.

Belgium.—The conversion of the Brussels Midi-Linkebeek-arleroi (35 mi.) route was completed in October. The second ussels Nord-Schaerbeek-Antwerp line (27 mi.) and the concting loop, Linkebeek-Schaerbeek, was progressing. Plans ovided for through freight working between Antwerp Nord d Monceau, near Charleroi, as soon as work in the Brussels a allowed.

France.—Work on the Paris-Lyons (318 mi.) electrification s proceeding steadily; the annual power consumption beeen Paris and Dijon would be 250,000,000 units, with a furer 150,000,000 units from Dijon to Lyons. The bulk of this wer would be produced in the Génissiat hydroelectric plant. sts of a new C_0-C_0 4,000-h.p. express locomotive were rerkably successful. It was the first French locomotive with al adhesion having two three-axle motor undercarriages. On est run between Paris and Bordeaux (362 mi.) a maximum eed of 105.6 m.p.h. was reached with an average of 81.4 p.h.

Germany.—Preliminary studies were made of the heavily ded railway network in the Ruhr zone and the adjoining ine province with a view to electrification. A start was connplated on the Rhine-Ruhr express route between Cologne, esseldorf, Hagen and Hamm. The conversion of the link tween Stuttgart and Waiblingen was undertaken. This concted the main electrified Stuttgart-Ulm-Munich line with the ittgart-Nuernberg and the Aalen routes.

Hungary.—Electric working was restored on the Budapest-gyeshalom main line (93 mi.). The locomotives on this line erated on the Kando system in which 50-cycle single-phase rrent was taken from the industrial network and converted to ree-phase variable frequency on the locomotive by rotating chinery. New 3,200-h.p. locomotives were delivered by the nz works. These had one three-axle and one two-axle underrriage, on each axle of which an induction motor was mounted. ve economical running speeds with automatic regeneration on wngrades were available. The electrification of the Budapest-atvan-Miskolc main line (115 mi.) was planned as part of a e-year program.

Italy.—Marshall aid funds were used to extend the 3,000 v. C. system to Genoa Brignolo on the Genoa-Rome route. A ort connecting link was to be built between Avellino and lma-San Genaro. This would shorten the distance between aples and Avellino by 9 mi. The old route, Poretta-Pistoia, mi. of single track, on the Milan-Bologna-Rome line, was opened for electric working. As the intermediate substations re not finished power was supplied from Bologna and orence and the resultant voltage drop was compensated for by ecial equipment on the electric locomotives and at certain ints along the line.

Netherlands.—During May 1949 the electrification of the etherlands railways from Eindhoven to Maastricht and Heern was opened. This section comprised 90 route and 230 track les and included the large coal distributing yard at Susteren. e work was estimated to save about 30% in coal amounting more than 300,000 tons a year.

Sweden.—The lines from Landskrona to Billeberga and Warrg to Borås, a total of 80 mi., were converted during the ar. The total length of electrified lines was now 3,500 mi. cluding 430 mi. of the Göteborg-Gäyle railway. These lines rried 85% of the total traffic.

Switzerland.—The power supply for the Swiss federal railys was investigated and a scheme was developed to meet the quirements necessitated by new conversion and increased servs over the next 10 to 15 yr., and to complete electrification. ovision would be made for an estimated annual consumption 970,000,000 units a year. The federal railways owned power stations which provided a total of 782,000,000 and private stations 99,000,000 units annually. Prolonged droughts and dry winters had periodically resulted in a shortage of power.

U.S.S.R.—The electrification of the line between Dolgintsevo and Nikopol (74.5 mi.) in the coal fields of southern Russia was completed in Nov. 1948, and would later be extended from Nikopol to Zaporozhe. Another conversion in this area was that of the line between the Black sea port of Poti and Samtredia (28 mi.) which was the junction between the Batumi line and the coast line from Tiflis to Tuapse.

India.—Additional sets of motorcar and trailer equipment were under construction in Great Britain for the Bombay suburban lines of the Great Indian Peninsular and the Bombay, Baroda and Central Indian railways. There was considerable French activity in seeking building and operating concessions for underground railways in cities abroad.

South Africa.—Work was in progress on the electrification between Bellville-Touws River and Capetown-Woltemade together with the conversion of the Cape suburban lines from 1,500 to 3,000 volts D.C. Multiple-unit stock built in Great Britain was delivered for the Reef suburban electrification, Johannesburg. Electric shunting locomotives were also on order for use there and in Capetown and Durban. (*See* also Railroads.) (J. W. Gr.)

Electrification, Rural: *see* Rural Electrification.

Electronics.

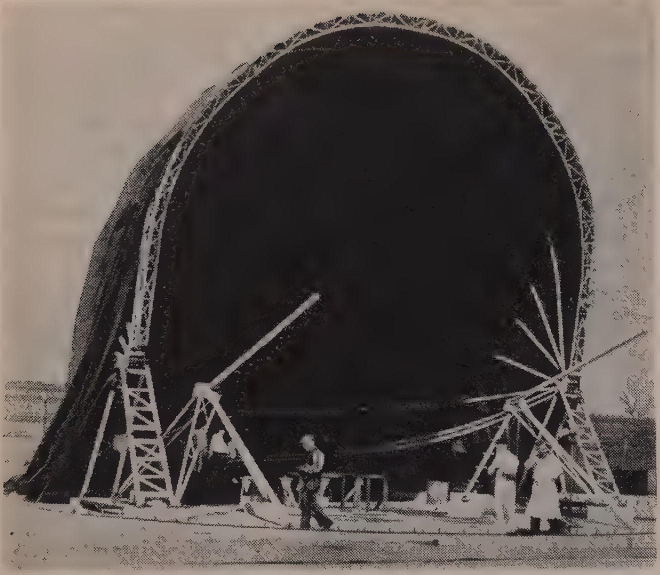
A number of developments in the field of electronics, employing adaptations of techniques devised during World War II, were announced in 1949. One of these was an atomic clock, of which details were published by the national bureau of standards where the new instrument was constructed.

The rotating earth provides the basic time standard, but from the time of Christiaan Huygens, who first applied it to a practical clock about 1670, the pendulum has been the principal secondary standard of timekeeping. In recent years, however, oscillating crystals of quartz had provided an accurate constant frequency of vibration that might be used to control the operation of clocks. The new device utilized vibrations of atoms in the ammonia molecule. It promised to surpass by one or two orders of magnitude the accuracy of the earth itself, which is subject to a gradual slowing down from tidal friction as well as sudden irregular variations due to causes that have not been fully explained.

The atomic clock, which utilized principles developed by Harold Lyons of the bureau's microwave research laboratory, was built with the assistance of B. F. Husten, E. D. Herberling and others. It was said to provide a time constancy of 1 part in 10,000,000 (equivalent to about three seconds per year), while it was theoretically capable of 1 part in 1,000,000,000 or even 10,000,000,000.

The molecule of ammonia is constructed like a pyramid with three atoms of hydrogen forming the triangular base and one atom of nitrogen the top. The pyramid is capable of twisting itself inside out 23,870,000,000 times per second. If very short radio waves, oscillating at this frequency, are passed through ammonia gas they may be absorbed, while vibrations of slightly higher or lower frequency, with which the molecule is not in tune, pass through more easily. Thus, basically, the atomic clock transmits through a spirally coiled absorption cell 30 ft. in length and containing ammonia, a stream of radio microwaves, which changes from slightly above to slightly below the ammonia absorption frequency.

By means of an intricate electronic circuit, a quartz crystal vibrating 100,000 times per second is continually compared with



VIEW OF A HALF-OPEN RADOME, a beamless, airtight structure made of fibre glass and synthetic rubber and designed as a shelter for radar installations. Inflated by a small vacuum cleaner, it was held up by internal air pressure and could withstand a 100-m.p.h. gale and a three-ton load of ice and snow

the unvarying absorption frequency, so that any tendency of the crystal to alter its vibration rate is immediately and automatically corrected by an error signal. The vibrations of the crystal are stepped down to 50 cycles to operate a clock dial of familiar type. Not only was the atomic clock seen as of potential use in scientific work, as in checking variations of the earth's rotation, but it was thought that it might also be able to furnish with greater precision the standards of constant frequency needed to keep accurately in tune many kinds of radar, radio and electronic equipment throughout the world, and thus to utilize most efficiently the crowded radio spectrum.

As part of the program of the Civil Aeronautics authority for safety in aerial navigation and traffic control, a new radar device, developed by engineers of the General Electric company, which would help planes to make all-weather approaches and landings at airports in greater safety and with fewer delays, was revealed in January. It was expected that the first units produced would be installed during 1950.

These sets might be installed up to two miles from the control tower, a remote system permitting the traffic controller in the tower to see the radar picture, displaying the location and flight path of every plane within a 30-mi. radius. Moving target indication was employed, eliminating fixed objects from the picture and presenting only moving aircraft.

Contour maps of the earth's surface might be made more rapidly and less expensively than in the past with the aid of airborne radar, Raymond C. Brown of State College, Pa., reported to the National Electronics conference held at Chicago, Ill., in September. He said that the new system, not yet in actual operation, was capable of mapping at the rate of 1,000 sq.mi. per flying hour. With the flying radar, he proposed, several thousand ground points per second could be observed, and the measurements then converted into measures of position and elevation for each of the points. The map produced would show elevation data in the usual way, as by contour lines or varying shades of colour.

A cloud analyzer, which indicated the thickness, height and density of clouds, was developed for the U.S. navy by the General Electric company. At the heart of the device, which is attached to a weather balloon that climbs into the upper atmosphere at a velocity of about 1,200 ft. per minute, is a piece of string impregnated with a salt. Its electrical conductivity is increased with moisture as it passes through a cloud, controllin a small radio transmitter which relays its reading to the groun station. Other instruments that are carried aloft give addition data, such as temperature and barometric pressure.

A physicist at the Bell Telephone laboratories, A. V. Holler berg, described a new method of amplifying radiofrequency si nals in a vacuum tube. The experimental device which employe this method was called a double-stream amplifier. A cylindric stream of electrons travels down a tube more than a foot lon This stream is enveloped by another slightly larger strea travelling in the same direction but more slowly. The tw streams pass through a wire helix from which the signal to amplified is impressed upon them. As they progress there interaction between them, causing amplification of the sign which is taken out as they pass through another helix at t other end of the tube. Another helical coil, surrounding t tube, guides the two electron streams. The method is partic larly suitable for amplifying signals of high frequency, *i.e.*, short wave length. The more wave lengths there are in t amplifying region, the greater is the gain.

A fundamental difference between this and other amplifyi tubes is that there is no metal structure in the space whe amplification occurs. In other tubes for high-frequency mic wave amplification, the small size of the elements, the sm spacing between them, the small clearance between the electr streams and the elements as well as the electron bombardm of the metal parts raise increasingly difficult problems as t frequency is increased. Design and construction of the doub stream amplifying tube followed theoretical studies by J. Pierce and W. B. Hebenstreit, of the Bell Telephone labo tories. Independent researches in the same field were carri out by L. S. Norgaard, of the RCA laboratories, and A. V. Hae at the Naval Research laboratory.

A new type of memory tube, called the graphecon, whi could store and intensify a fleeting image on the radar scope a had important possible scientific applications as well, was a nounced to the meeting of the Institute of Radio Engineers March by Louis Pensak, of the RCA laboratories. He said th the tube had visual memory, and would retain for more tha minute images that otherwise would have a life of less tha millionth of a second.

At the heart of the graphecon is a metal target, three inch square and coated on one side with a layer of pure quartz fifty-thousandth of an inch thick, which serves both as an sulator and a conductor. The target is sprayed with t electron beams, one of which is connected with the output the radar set and builds up on the target an image made electrical charges. This is similar to the image formed on sensitive screen of a television camera tube, except that in graphecon it is formed by electrons rather than by variations the light image. The second electron beam, again as in camera tube, scans the target and takes off the image. Sign from this beam may then be fed to a television picture tu where the radar pattern is displayed, more permanent and m brilliant than it appeared originally.

An application of the graphecon in scientific research announced in November to the New York section of the In tute of Radio Engineers by two other research workers from RCA laboratories, L. E. Flory and W. S. Pike. Scientists f quently make use of the oscilloscope to study phenomena wh can be converted into electrical variations. A tube like that i television receiver displays them graphically as a wavy bri line. If the effect is very brief, it may be impossible to see a very difficult even to record photographically the transient c play on the tube.

For such situations, the two engineers developed a stor cilloscope, employing the graphecon to hold the image long ough to be observed on a television screen. They said it was is possible to freeze for a full minute a tiny electrical signal, ming, perhaps, from an exploding atom, and lasting for as le as a billionth of a second.

A method analogous to radar, using reflections of high-fre- ency sound waves (above the audible range) rather than radio lses showed promise of helping surgeons to locate gallstones, foreign matter such as bullets, shell fragments and glass or oden splinters in the body, it was announced by George D. dwig of the Naval Research Medical institute in Washington, C. He developed the new technique on an experimental sis in collaboration with the Harrison department of Research rgery at the University of Pennsylvania, Philadelphia.

The ultrasonic waves are transmitted directly into the body om a vibrating quartz crystal placed in contact with the skin d excited by an electronic circuit. Reflections of these waves cur from the bones or from foreign materials and by detecting ese echoes the object may be located. Similar ultrasonic ethods were used to detect flaws in metals.

In recent years there had been great interest in methods of cording sound magnetically on wires, tapes and disks, though eir applications seemed limited because the only method of king duplicates was by playing back one tape or wire, and recording on another. Marvin Camras, physicist of the Armour search foundation of the Illinois Institute of Technology, nounced to the National Electronics conference a duplicating ethod which was analogous to contact printing in photography. worked most satisfactorily, he said, with records on magnetic pe, though satisfactory duplications of wire recordings had en made in his laboratory.

He explained that the master record is made on a tape of h coercive force, that is, one that is not easily harmed by ssage through another magnetic field. The blank copy tape, ced in contact with the master, is passed through a high fre- ency magnetic field where it becomes magnetized itself. This in exact correspondence with the master, which retains its n record. Copying may be done at many times the speed at ich the tape is played and the copy has negligible loss of elity. With a tape on which several records are made side by e in parallel lines of magnetization, all channels may be pied at once.

An electronic computing machine, called BINAC and said to the first small machine of this type for use in laboratories d factories, was announced by John W. Mauchly, president the Eckert-Mauchly Computer corporation, who built for the S. army an earlier electronic computing machine, the ENIAC, name being an abbreviation for "electronic numerical in- rator and computer." BINAC was applied to the new com- ter because it uses a binary number system with only one and o, instead of the decimal system with ten digits. An electrical se represents the number one while the absence of a pulse icates zero. By combinations of these any number may be resented. BINAC was said to be about three times as fast ENIAC and used only 700 tubes, as compared with 18,000 in earlier computer. It also had a mercury memory unit. This s an 18-in. column of mercury through which electrical pulses re sent back and forth. Data could thus be held in storage, n fed to other units of the machine for arithmetical proc- es. With a storage capacity of 15,000 binary units the mer- y column replaced many of the additional electron tubes in earlier machine.

James D. Cobine, of the General Electric Research labora- y, told a conference on gaseous electronics held in Pittsburgh, , of an electronic torch, hot enough to melt tungsten, most ractory of the elements, with a melting point of 3,370° C. By means of a magnetron oscillator, radio waves with a frequency of a billion cycles per second are produced. These are fed to an antenna, consisting of two concentric metal cylinders, at the end of which a high-frequency arc may be formed. As various gases are fed past the arc, a long jet of flame is produced. Some of these are extremely hot, while others are so cool that the finger is not burned if held in the flame.

Hot flames are produced with a gas such as nitrogen, which consists of molecules made of two atoms. The arc breaks them into their constituent atoms, but when they strike a surface they recombine, giving off heat. Helium and argon, however, normally consist only of single atoms. Since they cannot be broken and reunited, they yield a relatively cool flame. The electronic torch was still in the experimental stage, and its commercial possibilities had not been explored.

Working under the technical supervision of Ralph R. Shaw of the library of the department of agriculture and the sponsorship of that department and the Atomic Energy commission, Engineering Research Associates, Inc., developed a new electronic selector. This would automatically sift through a mass of technical data and select those needed for specific research jobs. It operated as a person would in looking through the cards in a library catalogue, but far more rapidly. It would scan up to 120,000 coded subject entries per minute.

In the machine a 2,000-ft. reel of film provides space for text and code for 60,000 abstracts or pages. Six coded entries may be made for each unit; if more are needed the text is repeated. The machine scans 500 ft. of film per minute, so the entire reel goes through in four minutes. Banks of phototubes read the code, and when the desired information comes along, a photograph of that page is taken. It is not necessary to stop the film, since the exposure is made with a stroboscopic light source giving a flash lasting two millionths of a second.

Another stroboscopic device for accurate timing of races was developed for the Bulova Watch company by J. C. Beekman and E. M. Whitley, of San Carlos, Calif. To photograph the finish of a horse race, for example, a slit camera is often employed. This forms the picture on a vertical slit, always open, and aligned exactly with the finish line. The film moves behind the slit at a speed which corresponds to the motion of the horses, so that undistorted images are obtained. The new camera adds to this a time record, which is photographed directly on the film, from a series of counter dials inside the camera and timed by a tuning fork. They are started by an acoustic relay placed near the starter and actuated when his gun is fired. The dials are illuminated every hundredth of a second by a stroboscopic light flash, lasting for ten millionths of a second. Thus, as the racers cross the finish line, their exact times, to the nearest hundredth of a second, are recorded at the top of the film. (*See* also PHYSICS; STANDARDS, NATIONAL BUREAU OF.)

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(J. STO.)

Elementary Education: *see* EDUCATION.

Elks, Benevolent and Protective Order of: *see* SOCIETIES AND ASSOCIATIONS.

Ellice Islands: *see* PACIFIC ISLANDS, BRITISH.

El Salvador: *see* SALVADOR, EL.

Embassies, United States: *see* AMBASSADORS AND ENVOYS.

Emigration: *see* IMMIGRATION AND EMIGRATION.

Employment.

United States.—The civilian labour force (persons not in the armed forces and available for employment) numbered 63,637,000 in Aug. 1949, a gain of 451,000 over Aug. 1948. The labour force reached its maximum, for the first eight months of 1949, during July, when 63,815,000 workers were available. The unemployment figure in Aug. 1949 was 3,689,000 as compared with 1,941,000 in Aug. 1948.

Males in the civilian labour force numbered 45,163,000 in Aug. 1949 as against 45,215,000 in the same month of 1948. Females numbered 18,474,000 as compared with 17,971,000 in Aug. 1948.

Employees in nonagricultural establishments numbered 43,027,000 in Aug. 1949, a decrease of 1,467,000 from Aug. 1948. During the year there were decreases in every area of nonagricultural employment except finance and government (Table I).

In these latter areas there was an increase from 7,275,000 workers to 7,595,000 during the period. The largest decrease occurred in manufacturing, where employment in Aug. 1949 fell to the level of 14,088,000 workers as compared with 15,400,000 in Aug. 1948. This was a loss of 1,312,000 workers.

Table. I—*Number of Employees* in Nonagricultural Establishments, by Industry Division, United States (estimated)*
(In thousands)

Industry division	Aug. 1949	July 1949	June 1949	Aug. 1948
Total estimated employment	43,027	42,535	42,792	44,494
Mining	968	494	970	1,006
Contract construction	2,333	2,279	2,205	2,384
Manufacturing	14,088	13,755	13,885	15,400
Transportation and public utilities	4,000	4,014	4,030	4,213
Trade	9,212	9,205	9,327	9,366
Finance	1,780	1,781	1,774	1,742
Service	4,831	4,845	4,829	4,850
Government	5,815	5,707	5,772	5,533

*Estimates include all full- and part-time wage and salaried workers in nonagricultural establishments who worked or received pay during the pay period ending nearest the 15th of the month. Proprietors, self-employed persons, domestic servants and personnel of the armed forces are excluded. These estimates have been carried forward from 1947 bench-mark levels.
Source: United States Bureau of Labor Statistics, *Monthly Labor Review.*

Production worker employment decreased in every one of the major manufacturing industries in the United States during the period July 1948 to July 1949. Table II clearly shows these changes.

Table II.—*Number of Production Workers and Indexes of Production-Worker Employment and Pay Rolls in Manufacturing Industries, by Major Industry Group, United States*

Industry group	Number of production workers Estimated in thousands		Production worker indexes, (1939=100)		Pay Roll Indexes (1939=100)	
	July 1949	July 1948	July 1949	July 1948	May* 1949	July 1948
All manufacturing	11,754	12,987	143.5	158.5	329.4	360.0
Durable goods	5,864	6,681	162.4	185.0	367.2	403.0
Nondurable goods	5,890	6,306	128.6	137.7	292.4	318.0
Iron and steel and their products	1,380	1,601	139.1	161.4	306.6	336.9
Electrical machinery	451	535	173.9	206.6	386.0	436.3
Machinery, except electrical	970	1,209	183.5	228.8	406.8	473.6
Transportation equipment, except automobiles	412	430	259.6	270.6	570.2	552.4
Automobiles	778	787	193.5	195.5	394.5	423.3
Nonferrous metals and products	325	388	141.7	169.2	316.1	360.6
Lumber and timber basic products	734	829	174.5	197.3	452.3	502.9
Furniture and finished lumber products	406	452	123.9	137.8	296.1	320.4
Stone, clay, and clay products	408	450	139.2	153.2	321.5	334.2
Textile-mill products and other fibre manufactures	1,044	1,243	91.3	108.7	233.6	285.4
Apparel and other finished textile products	1,062	1,070	134.5	135.6	283.3	303.6
Leather and leather products	356	375	102.6	108.1	209.6	236.5
Food	1,319	1,364	154.4	159.7	316.5	352.2
Tobacco manufactures	82	83	87.9	88.8	196.0	205.5
Paper and allied products	366	388	138.1	146.1	316.3	341.7
Printing, publishing and allied industries	427	430	130.1	131.1	277.3	260.1
Chemicals and allied products	522	567	181.0	196.6	425.9	432.7
Products of petroleum and coal	163	170	154.2	160.7	343.8	353.4
Rubber products	169	191	140.0	157.7	294.5	329.7
Miscellaneous industries	380	425	155.3	173.9	350.9	375.0

*The figures beyond May 1949 were unavailable at the close of the year, because of extensive revisions being undertaken by the bureau of labour statistics.
Source: United States Bureau of Labor Statistics, *Monthly Labor Review.*

Pay roll indexes of production workers showed a decrea from July 1948 to May 1949 in all areas except two. Th increased in both transportation equipment (except auton biles) and in printing, publishing and allied industries. T figures beyond May 1949 were unavailable at the close of 19 because of extensive revisions being undertaken by the bure of labour statistics.

The durable goods index of production worker employme fell from 185.0 in July 1948 to 162.4 in July 1949; the no durable goods index fell from 137.7 to 128.6 in the same peri (1939=100). The number of and indexes of production worl employment and pay rolls in United States manufacturing indu tries are shown in Table II.

Table III gives indexes of employment and pay rolls selected nonmanufacturing industries in April and May 1949 a May 1948.

Table III.—*Indexes of Employment and Weekly Pay Rolls in Selected Nonmanufacturing Industries, United States*
(1939 average=100)

Industry group and industry	Employment Indexes*			Pay Roll Indexes*		
	May 1949	April 1949	May 1948	May 1949	April 1949	M 1
Mining						
Coal						
Anthracite	88.4	89.6	91.4	215.8	195.7	24
Bituminous	102.5	104.7	108.9	323.8	326.1	34
Metal	100.6	102.4	98.7	226.9	235.2	20
Iron	157.6	157.7	155.0	372.5	374.3	33
Copper	107.9	110.5	106.0	255.6	277.1	2
Lead and zinc	98.9	104.4	100.6	255.6	265.6	22
Gold and silver	34.6	34.9	31.3	62.7	64.3	[illegible]
Miscellaneous	187.3	187.6	182.9	390.2	388.4	3
Quarrying and nonmetallic	119.0	118.9	124.2	320.0	309.6	3
Crude petroleum and natural gas production	113.4	112.6	112.5	242.7	235.8	2
Transportation and public utilities						
Class I railroads	125.3	123.0	133.8	Unavailable		
Street railways and buses	123.2	124.3	128.5	227.2	227.2	2
Telephone	199.6	200.4	198.4	348.2	342.0	3
Telegraph	84.7	86.1	96.3	208.4	210.6	2
Electric light and power	116.3	116.0	112.3	211.3	208.1	1
Trade						
Wholesale	112.6	114.0	114.5	218.7	218.7	2
Retail	109.5	113.0	113.1	219.4	223.4	2
Food	111.5	112.5	116.3	232.2	234.0	2
General merchandise	119.4	128.2	123.7	234.3	244.0	2
Apparel	112.4	123.9	115.2	210.4	238.1	2
Furniture and house furnishings	88.9	89.2	91.9	178.6	176.1	1
Automotive	109.2	108.2	107.0	225.9	220.3	2
Lumber and building materials	116.0	115.9	123.7	242.2	237.5	2
Service						
Hotels (year-round)	112.9	111.6	117.0	238.9	232.0	2
Power laundries	112.2	110.3	119.0	230.1	221.2	2
Cleaning and dyeing	154.9	151.2	160.6	322.4	308.9	3

*The figures beyond May 1949 were unavailable at the end of the year, becau extensive revisions being undertaken by the bureau of labour statistics.
Source: United States Bureau of Labor Statistics, Monthly Labor Review.

Canada.—The general employment index (1937=100) a aged 171.6 for 1948 and 165.6 for the first quarter of 1949. Canadian industrial employment index averaged 179.2 in 1 (1937=100) compared with 177.3 for the first quarter of 1

Great Britain.—The total working population of Great B ain (analogous to the labour force in the United States) n bered 23,194,000 in mid-1949. This was an increase over

Table IV.—*Total Working Population and General Manpower Positio Great Britain*
(In thousands)

	June 30, 1949	Dec. 31, 1948	Ju
Total working population			
Males	16,023	16,069	1
Females	7,171	7,116	
Total	23,194	23,185	2
His Majesty's forces and women's services			
Males	737	774	
Females	33	34	
Total	770	808	
Former members, his majesty's forces, as yet unemployed	17	18	
Registered unemployed	250*	348*	
Persons in civil employment			
Males	15,079	15,019	1
Females	7,078	6,992	
Total in civil employment	22,157	22,011	2

*End of month estimate.
Source: *Ministry of Labour Gazette* (London).

d-1948 figure which was 23,146,000. The total employed in vil employment also increased during the same period from ,926,000 to 22,157,000 persons. (*See* Table IV.)

Table V.—*Analysis of Civil Employment by Industrial Groups, Great Britain*

(In thousands)

Industry or service	June 30, 1949	Dec. 31, 1948	June 30, 1948
sic industries			
Coal mining	784	788	787
Gas, electricity, water	306	301	296
ransport, communication	1,805	1,803	1,814
Agriculture, fishing	1,279	1,271	1,268
Other	82	82	82
nufacturing			
Chemicals, etc.	438	433	426
Metals, engineering vehicles	3,900	3,921	3,904
extiles	985	971	948
Clothing	741	716	700
Other	2,188	2,160	2,136
lding and contracting	1,489	1,480	1,497
tributive trades	2,766	2,739	2,689
fessional, financial and miscellaneous services	3,927	3,876	3,925
lic administration	1,467	1,470	1,454
Total in civil employment	22,157	22,011	21,926

Source: *Ministry of Labour Gazette* (London).

South Africa, Union of.—The general employment index 937=100) averaged 128.6 for 1948 and 130.7 for the first uarter of 1949. The industrial employment index averaged 6.1 for 1948 (1937=100) and 160.9 for the first quarter of 49.

Australia.—The Australian general employment index 937=100) averaged 137.0 for 1948 and 140.0 for the first uarter of 1949. The industrial employment index averaged 7.9 for 1948 (1937=100) and 160.5 for the first quarter of 49.

South America.—Argentina's index of industrial employ-ent (1937=100) averaged 146.9 for 1947, which was the latest ailable figure at the close of 1949. The Chilean industrial nployment index (1937=100) averaged 134.0 for 1948.

Norway.—The industrial employment index for 1948 (1937=0) averaged 133.3 and averaged 138.1 for the first quarter of 49. The general employment index was 106.9 on the average 1948 and 108.5 for the first quarter of 1949.

Sweden.—The Swedish industrial employment index for 1948 937=100) averaged 125.5 and averaged 126.2 for the first uarter of 1949.

Switzerland.—The industrial employment index for 1948 eraged 135.0 (1937=100).

France.—The French industrial employment index averaged 0.3 in 1948 (1937=100). The general employment index eraged 107.7 (1937=100) in the same year. (*See* also BUSI-ESS REVIEW; CENSUS DATA, U.S.) (P. TA.)

ndocrinology. By far the most notable advance in endocrinology during the year 1949 was the scovery that rheumatoid arthritis and certain other chronic seases of obscure aetiology could be controlled by the admin-tration of one of the steroid hormones of the adrenal cortex, by stimulating the gland to secrete that hormone. This de-lopment represented the confluence of two separate streams of search, one laboratory and the other clinical.

It was known, from previous work with animals, that many pes of stress (*e.g.*, cold and heat, noxious drugs and infections, erwork and anoxia) are followed by adrenal cortical hyper-ophy and evidences of an increased production of adrenal rmones. This reaction is brought about by the stress stimulus ting in an unknown manner to signal the central nervous stem. The signal is then relayed to the anterior pituitary and causing a release of adrenocorticotrophic hormone CTH), which is the specific stimulator of the adrenal cortex. nder the influence of a sudden outpouring of ACTH, morpho-gical and chemical changes occur in the adrenal cortex, leading to an increased production of the adrenal steroid hormones. These steroids enable the organism to combat or adjust itself to the stress and to survive. The adrenalectomized animal, which is unable to carry through the described mechanism, succumbs to environmental or internal stresses which the normal animal can withstand. Hence, this complex system consisting of neurological pathways and hormonal relays seems to constitute a vital self-corrective or homeostatic mechanism for the adaptation of the living organism to threatening environmental or internal influences, which may otherwise have catastrophic consequences.

STUDENTS in Boston, Mass., placing their bids for employment in 1949, as industry appeared to be catching up with the wartime shortage of college-trained workers in certain fields. Competition was very keen in law and journalism, for example, but slight in teaching, medicine and social service

The adrenal cortical steroids which are effective against stress are the group of C_{11} oxysteroids (Compounds A, B, E and F of E. C. Kendall). Because of their important effects on certain aspects of carbohydrate metabolism, they were sometimes called glucocorticoids. But their precise mode of action in facilitating adaptation to stress was not yet known at the end of 1949. However, Hans Selye and others who contributed much of the above knowledge studied the phenomenon of adaptation and reported certain evidence which was suggestive of the role of the various adrenal cortical steroids. It was postulated that some chronic disorders might be expressions of an inadequate or unbalanced reaction of the adrenal cortex to past or continuing stresses and that certain types of hypertension, vascular disorders and arthritis might be considered to be "diseases of adaptation."

At the same time as the complexities of adrenal function were being unravelled by physiologists, clinicians were investigating the characteristics of rheumatoid arthritis, a common chronic and crippling disorder of the joints, etc., of unknown origin. It was observed that a woman afflicted with this disorder might be free of symptoms during the whole course of a pregnancy. It was also known, through the work of P. S. Hench and associates, that an arthritic suffering from certain types of liver disease accompanied by jaundice was often relieved of his arthritis during the course of the liver dysfunction. Hench showed further that bile pigments or bile salts (present in jaundiced blood) have no therapeutic value, that the female sex hormones (increased in pregnancy) do not relieve arthritis. Two years before, Eleanor Venning demonstrated that in pregnancy, in addition to the sex steroids, there was also found a high level of the C_{11} oxysteroids of the adrenal cortex. With all these considerations in mind Kendall, Hench, C. H. Slocumb and H. F. Polley administered one of the glucocorticoids (Compound E or Cortisone) to patients with rheumatoid arthritis. Striking beneficial effects became evident within one or two days, and complete relief was obtained during prolonged therapy. These findings were later amply confirmed by others.

During 1949 it was also shown that ACTH administration was equally efficacious in suppressing the symptoms and signs of rheumatoid arthritis. ACTH or Cortisone, or both, were also tested in many other acute and chronic disorders such as rheumatic fever, psoriasis, lupus, various allergies, etc. While it was too early to judge accurately, it would seem that the C_{11} steroids are able to suppress the overt manifestations of many seemingly unrelated diseases. It also appeared that, with the aid of these steroids, the tissues of the body acquire an increased capacity to "resist" pathological changes. The implications for the theories of disease processes and for the role of the endocrine glands in health and disease were manifold.

Pituitary.—The supply of the protein hormones for experimental and clinical purposes continued to be limited by the fact that they had to be prepared by extraction and purification, from the respective glands removed from the meat-producing animals (beef, sheep, hog, etc.). The precise structure of any protein was still almost completely unknown. Synthesis from constituent animo acids seemed beyond immediate possibility. With the exception of thyroxine, the protein hormones do not seem to possess an "active" nonprotein group. However, C. H. Li and H. M. Evans showed that a reasonably small peptide, which resulted from enzymatic hydrolysis of purified ACTH, has the full physiological activity of the complete protein. This peptide consists most probably of 6–7 amino acids. If the structural pattern could be determined, it would open up the possibility of a partial synthesis of an ACTH-like substance. The significance of such an event would be great, both from its practical aspect and from its bearing on the relation between chemical structure and physiological function of the other protein hormones.

Pancreas.—The intense development of tissue enzyme chemistry had led to the general expectation that hormones which affect the metabolism of foodstuffs would be found to do so by increasing or decreasing rates of particular intermediary reactions. For this reason the location of the action of insulin was looked for in some known enzymatic reaction concerned with glucose phosphorylation or its deposition as glycogen. Despite intensive search in this direction the results were not rewarding in 1949. A somewhat different approach was suggested by the work of R. Levine *et al.* They observed that insulin lowered the level of galactose in the body fluids when this sugar was given to eviscerated animals from whom the kidneys were also removed. Such experimental preparations cannot metabolize galactose, for their tissues do not possess the necessary enzymes. The effect of insulin was, therefore, interpreted to mean that this hormone in some way increased the rate at which galactose entered the cell interior through the cell membrane. It seemed reasonable to assume that the action of insulin on glucose is of the same nature. If this is so, the hormone does not exert an action on any of the enzymes of glucose metabolism but makes glucose more freely available to them. Its action is one of fu
thering "transport," not use. (*See* also DIABETES; ZOOLOGY.)

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England: *see* GREAT BRITAIN & NORTHERN IRELAND, UNITE
KINGDOM OF.

English Literature.

In English literature during 194
Winston Churchill's concise, forcib
English, his feeling for words and his mastery of narratio
spoke their own eloquent testimony in the second volume
his memoirs of World War II, *Their Finest Hour.* The exper
ence of war sharpened the perception and descriptive gifts
some younger men called from peaceful pursuits to battle in r
mote places. Col. F. Spencer Chapman told of his fight
organize resistance in Japanese-occupied Malaya in *The Jung*
Is Neutral, one of the best of all war books. Eric Williams wa
another who did not lack resource in unfamiliar surrounding
and *The Wooden Horse,* the story of his escape from Stala
Luft III, by means of a tunnel scraped from the earth, caugh
the peacetime imagination. Brig. Fitzroy Maclean publishe
Eastern Approaches, his remarkable record of personal achiev
ment, which included accounts of his diplomatic stay and wa
derings in the prewar Soviet Union as well as of his mission
Yugoslavia.

The first volume of *The Oxford History of English Art,* a su
vey to be issued in 11 vol. under the editorship of T. S.
Boase, president of Magdalen, made a welcome appearanc
This volume (v), which appeared out of chronological sequenc
was written by Joan Evans and was devoted to the years 1307
1461. Sir Kenneth Clark's *Landscape into Art* was concerne
with the development of landscape painting as "the chief artist
creation of the 19th century." Arthur M. Hind issued the se
ond part of his great critical catalogue of *Early Italian Engra*
ing (the earlier part was published in 1938); and with *La*
Saxon and Viking Art, T. D. Kendrick completed his two-vo
ume informative and scholarly survey.

Douglas Jerrold produced a one-volume *Introduction to t*
History of England, which began with prehistoric man and we
to the loss of Normandy in 1204. J. E. Neale devoted h
knowledge of the Elizabethan period to a study of *The Eliz*
bethan House of Commons. Herbert Butterfield, who also pu
lished two other important books—one on the relationship
Christianity and history, the other on the origins of science—
described in *George III, Lord North and the People* how Lo
North's ministry, then struggling with the American colonie
reached a particularly critical phase in 1779; and B. Wilkins
issued the first volume of his new documentary *Constitution*
History of England, 1216–1399, which went to the year 13
G. M. Trevelyan issued *Autobiography, and Other Essays,* a
G. P. Gooch's *Studies in German History* collected 12 pape
Events leading up to World War II were clarified by the pub
cation of several volumes of *Documents on British Forei*
Policy, 1919–39, edited by E. L. Woodward and Rohan Butl
and by Elizabeth Wiskemann's history of the relations betwe
Hitler and Mussolini, *Rome-Berlin Axis.*

Laughter in the Next Room, the fourth volume of Sir Osbe
Sitwell's delightful autobiographical sequence, *Left Hand, Rig*
Hand! opened with a picture of Armistice night in London
1918 and then roved over the afterwar years, again giving d
attention to the diverting oddities of his father's character.

There were two interesting portraits of Ruskin—Derrick Leon's studious *Ruskin: the Great Victorian* (written before the publication in 1948 of Adm. Sir William James's book on the correspondence relating to the marriage with Effie Gray), and Peter Quennell's lucid and objective *John Ruskin.* Rossetti, too, was twice presented. Helen Rossetti Angeli's *Dante Gabriel Rossetti* was written in order to remove some misconceptions concerning Rossetti's life and character and his relations with his friends and fellow artists; Oswald Doughty's *A Victorian Romantic: Dante Gabriel Rossetti* was a painstaking study which made plain the complex personality of the poet and artist.

Sir Charles Tennyson used family letters and papers to illumine some obscurities and personal problems in the life of his illustrious grandfather, *Alfred Tennyson;* Hesketh Pearson, encouraged by Bernard Shaw, turned to the character and career of *Dickens,* examining the books and noting what was biographically revealing; and Roger Fulford's *The Prince Consort* emphasized Prince Albert's personal contribution to the increase in the political powers of the crown during the middle years of the 19th century, as well as his interest in his family affairs.

The marchesa Origo's absorbing account of Byron's love affair with Teresa Guiccioli—*The Last Attachment*—included 149 of Byron's love letters to Teresa, some of her answers, her unpublished account of his life in Italy—*Vie de Lord Byron*—and other relevant documents. Achievement in the political sphere was the central theme of I. Deutscher's documented and balanced biography of *Stalin.* A new volume brought the *Dictionary of National Biography* up to 1940.

R. W. Chapman's *Jane Austen: Facts and Problems* brought together some researches into various aspects of her life and work and method of writing. *Poets and Story-Tellers,* a book of essays, was published by Lord David Cecil. Bernard Blackstone's *Virginia Woolf* was an interpretation of her method as novelist and critic. Edwin Muir's diverse and discriminating critical gifts were displayed to some purpose in *Essays on Literature and Society* and Norman Ault shed some *New Light on Pope.* In *The Common Asphodel* Robert Graves collected his essays on poetry compiled between 1922 and 1949 and allowed the reader a view into the poet's workshop; and the storyteller's and playwright's workshop was partially illumined by Somerset Maugham's *A Writer's Notebook,* culled from 15 stoutish notebooks which he kept over a period of about 50 years.

Fiction.—Aldous Huxley and George Orwell used their considerable talents to depict a scarifying future. Huxley's *Ape and Essence* pessimistically portrayed human society after a third world war had wrecked 20th-century civilization; Orwell's vision of society 34 years hence, *Nineteen Eighty-Four,* was scarcely more reassuring. Joyce Cary was more concerned with character and emotion in his *A Fearful Joy,* a swiftly paced narrative depicting the exuberant and diverting sides of shady characters. H. E. Bates's *The Jacaranda Tree* told of the reactions of a group of characters thrown together by circumstances; in *The River Line,* Charles Morgan seemed overmuch concerned with the sensibilities of his characters; Compton Mackenzie returned to the Highlands, lairds, ladies and local colour with *Hunting the Fairies;* and Eric Linklater went back to Scotland's early days for a good-humoured frolic about giants, a poet and a princess—*A Spell for Old Bones.*

Rex Warner's allegory, *Men of Stones,* was concerned with the conflict between authority and freedom. Tom Hopkinson chose another familiar theme—political escape from a totalitarian country—for his tale *The Long Slide;* Malcolm Muggeridge's *Affairs of the Heart* made a deft and high-spirited affair of one literary man's investigations into the emotional entanglements of another (deceased); William Sansom turned from the short story to an impressive full-length study in jealousy, *The Body;* and Jocelyn Brooke's blend of reminiscence and reflection made *A Mine of Serpents* an agreeable and realistic account of a man's life.

Elizabeth Bowen's *The Heat of the Day* brilliantly recreated the atmosphere of London in 1942; and the setting of Ivy Compton-Burnett's *Two Worlds and Their Ways* was a ramshackle country house, and the main theme the sending to school of two children. Nancy Mitford's *Love in a Cold Climate* was a diverting portrayal of life and behaviour in high society.

Among the short-story writers Rhys Davies, in the titlepiece to a collection called *Boy with a Trumpet,* showed that his gifts were not confined to tales about Wales and Welshmen; and William Plomer's *Four Countries* was a volume worthy of one who confessed the debt that he owed to Guy de Maupassant.

(A. Ck.)

Poetry.—The general impression was that the younger generation, those who began to write during and after World War II, shared in common an outlook and philosophy that turned away from cynicism, the political preoccupation, the class-bitterness of the 1930s. It was significant that a first book by a newcomer, A. J. McGeogh, should be called *Annus Mirabilis.* From the poetic point of view, that truly describes the year which saw the appearance of Edith Sitwell's own selection of her poetry, *Canticle of the Rose,* including the Cassandra-like war poetry that carried her name and fame throughout the English-speaking world. Two other women poets produced notable books: Kathleen Raine, in *The Pythoness,* and Dorothy Una Ratcliffe, in *Until that Dawn,* a collection of Yorkshire songs.

The outstanding collection of new poems was *The Labyrinth,* by Edwin Muir. Here was major poetry, simple, subtle, passionate and direct, like that of Edith Sitwell. Another collection of new work from the poet laureate, John Masefield, *On the Hill,* was the vision of a veteran, looking back over the landscape of his life. Another elder poet, too, was Herbert Palmer, whose *Old Knight,* "a poem sequence for the present time," was a title which spoke for itself. His prophetic strain was still unimpaired. Edmund Blunden's quiet voice was heard again in *After the Bombing;* and Ronald Bottrall published *The Palisades of Fear.*

Among the poets putting out *Collected Poems* were Louis MacNeice and Laurence Whistler. MacNeice had grown in stature with time, as had Cecil Day Lewis. Their work was the direct statement of distinctive personalities, artists who had found the way to a statement in song of the problems of our time, giving universality to their individual reactions. Laurence Whistler was more intimate, more a poet of solitude. Comparable with him was Clifford Dyment, whose work, now collected, showed a lyric poet of a Heine-like keenness of touch. Finally, mention must be made of the translation of Dante Alighieri's *Inferno* by Dorothy L. Sayers. (*See* also AMERICAN LITERATURE; BOOK PUBLISHING; CHILDREN'S BOOKS; LITERARY PRIZES.)

FILMS OF 1949.—*Charles Dickens: Background for His Works; The Lady of the Lake* (Coronet Instructional Films). (R. CHU.)

Entomology.

Insects contaminate as well as consume food products. In recent years, a great deal of attention had been given to the elimination of insects and their body parts, excrement and webbing from all types of food products. Concerned in this endeavour were public-health authorities, entomologists, insecticide manufacturers, food processors and canners. During 1949 the most concerted action ever attempted was under way to insure wholesome, insect-free, fresh, dried, canned and frozen fruits, cereals and vegetables for the consumption of the public. New and more effective insecticides were being investigated and used by entomologists for this single purpose—the control, and, in some cases, the complete eradication of insect pests.

Bee Culture.—In the United States, according to the bureau of entomology and plant quarantine, the honeybee produces more than 200,000,000 lb. of honey and 4,000,000 lb. of beeswax each year; yet by far the greatest service the bee renders to man is the cross-pollination of valuable and necessary agricultural plants. Without this insect many of our most valuable food crops would become barren and soon disappear and many beautiful ornamentals would also cease to exist.

Foul brood disease of bees was effectively controlled in the hives when one-half gram of sulfathiazole added to a gallon of sugar syrup, or combined with pollen, was fed them. It was estimated that this treatment resulted in a saving per year of about 100,000 colonies of bees worth $1,000,000 and honey worth $2,000,000, together with great gains in the pollination of plants.

Cabbage Insects.—According to W. J. Reid, Jr., and F. P. Cuthbert, Jr., of the U.S. bureau of entomology and plant quarantine, caterpillars infesting cabbage and other cole crops in the south were most successfully controlled by 3% DDT applied as a dust every two weeks. A 1% DDT mixed with a 2% combination of di- and trimethylnaphthalenes was also as effective as 3% DDT dusts. Technical benzene hexachloride or lindane proved to be as toxic as DDT in equal dosages of active ingredients and also controlled aphids. Three and five per cent dusts of toxaphene and rothane were also effective against the caterpillars and aphids.

Codling Moth on Apples.—DDT continued to be the favoured insecticide for controlling this insect in apple orchards. According to the available statistics, DDT increased the value of the 1948 apple crop by at least $225,000,000.

Cotton Insects.—Investigations showed that 3% benzene hexachloride (BHC) mixed with 5% DDT gave excellent control of the boll weevil, bollworm and cotton aphid. Plots treated with this mixture produced an average of 496 more pounds of seed cotton per acre than untreated areas. Calcium arsenate alone, and with nicotine, also gave better than normal yields. Chlorinated camphene applied after the plants had set and were maturing gave an average of 563 more pounds of seed cotton per acre than when the same insecticide was applied earlier, and 403 more pounds than no treatment.

Sweet Corn.—Better quality of roasting ears of sweet corn was obtained when the insecticides ryania and rothane were used to control the corn-ear worm and the European cornborer. Ryania was found most effective in killing the larvae of the corn borer and rothane the most promising in destroying the corn-ear worm.

Grasshopper Control.—During the summer of 1949, 140,000 ac. of land in the United States were baited for the control and elimination of grasshoppers. The use of poison baits and chlordane resulted in 90% control. An estimated 6,000 tons of grasshoppers were killed daily, resulting in saving 24,000 tons of forage daily—enough to supply 1,700 cattle.

Mosquito Larvae Control.—In the control of mosquito larvae B. F. Burgess, Jr., found that the surface active agent Ethofat 142/20 is the most suitable spreading agent for DDT-oil larviciding formulations.

European Corn Borer Parasites.—The most important parasites of the European corn borer in the United States were: *Lydella stabulans grisescens* (R. & D.) an introduced exotic species; *Pyraustomyia penitalis* (Coq.) native species; *Eulophus viridulus* (Thoms.) exotic species; *Macrocentrus gifuensis* (Ashm.) native; *Horogenes punctorius* (Roman) introduced; *Aplomya caesar* (Aldrich) native; *Chelonus annulipes* (Wesm.) introduced.

Insect Resistance to Insecticides.—The development and extensive uses of new insecticides had demonstrated beyond a doubt the fact that all insects of a given species vary in their susceptibility to the killing efficacy of any insecticide. It had long been known that certain scale insects such as black scale and red scale of citrus were able to survive rather heavy doses of cyanide fumigation, whereas others of their kin were killed. This survival quality was called resistance. The codling moth of apples, pears and other fruits had shown resistance, in certain localities, to arsenate of lead sprays. DDT, the first so-called all-round killer of many insects, and specially deadly to the common housefly, failed within two or three years to give an adequate control of this insect with two or three times the normal dosage. What had happened in the control of these insects was occurring with other insects and insecticides. Therefore, it appeared from recent experience that there was no such a thing as a perfect and lasting insecticide for any insect pest.

Hessian Fly Control.—The use of the Hessian-fly resistant Pawnee wheat in Kansas, greatly increased the production for the following reasons: (1) fewer larvae developed on this strain; (2) adult Hessian flies were smaller and matured more slowly; (3) plants were rarely killed; (4) tillers suffered less than in other varieties, resulting in from 17% to 42% higher yields.

Wireworm Control.—Experiments conducted over a two-year period in California by W. H. Lange, Jr., University of California, and M. W. Stone, U.S. bureau of entomology and plant quarantine, showed that chlorinated propane-propylene at the rate of 26 to 36 gal. per acre and ethylene bromide (36 lb.) per acre, at the rate of 2 gal., when applied as soil fumigants 7 to 12 in. deep, gave very good control of wireworms.

Forest Insects in Canada.—The spruce budworm in the maritime region of Canada increased slightly in 1949 over 1948. The largest and most severe outbreaks, covering about 280 sq.mi., occurred in Victoria county, and Madawaska county, N.B. The defoliation ranged from 25% to 100%. Other outbreaks occurred in the Portage Brook and also in Newfoundland and Nova Scotia areas.

In addition to the spruce budworm, other insect pests to forests were: black-headed budworm on balsam and spruce in Quebec, Alberta and British Columbia; spruce needleworm on spruce and balsam in Quebec; European spruce sawfly on spruce in Quebec; hemlock looper over the maritime provinces; and yellow-headed spruce sawfly on white spruce in Quebec and Saskatchewan (heavy). Birch sawfly decreased somewhat in Manitoba, but spruce gall adelges caused considerable loss to Douglas fir in British Columbia.

Animal Pests.—For the control of the chicken lice, fowl tick or blue bug, poultry bedbug, poultry mite and chicken flea a 2% oil or chlordane emulsion spray applied to all parts of the houses and nesting boxes was very effective. It was also equally effective against the winter tick of cattle and horses.

Housefly Control.—Experiences in house and stable fly control in barns and barnyards, where DDT alone failed to give adequate control, showed that where DDT, methoxychlor or chlordane were applied regularly and thoroughly and accompanied by sanitation, good or excellent control was possible.

Mass Production of Insects.—Large quantities of insects are reared for experimental purposes by many entomological departments. During 1949 the University of Wisconsin Research Foundation laboratory produced daily approximately 500 pea aphids, 1,000 cockroaches, 8,000 houseflies, 1,000 clothes moths and hundreds of carpet beetles, red spiders and others to make up a list of 20 species in all.

DDT as an Insecticide.—During 1948 and 1949, the extensive use of DDT to control the insects infesting cereal and

MIGRATORY GRASSHOPPERS, part of a horde covering 3,000 sq.mi. which was eating its way into California from Nevada in 1949. A fleet of 50 planes, mobilized in June by the U.S. department of agriculture, spread poisoned bait for the pests at the rate of 500 tons a day

forage crops resulted in the publication of no less than 85 important papers in the United States and other parts of the world (England, Australia, Italy, Canada). In many of these DDT was compared with many of the standard older insecticides such as arsenate of lead, sabadilla, pyrethrum, derris, sulphur, cryolite, rotenone, toxaphene, methoxychlor and also with such other newer insecticides as BHC and lindane, parathion and chlordane. Good control was reported for army worms, bruchids, corn-ear worms, cucumber beetles, cutworms, chinch bugs, corn rootworms, clover root borers, European corn borers, flea beetles, leaf hoppers, lygus bugs on alfalfa and beans, rice bugs, webworms, pests in stored grain, seeds and flour, velvet bean caterpillars, wireworms in soil, white-fringed beetles, sugar-cane borers and thrips, poultry ectoparasites, and weevils (alfalfa, clover leaf, clover root).

DN 289.—This is a nonoil insecticide for control of scale insects and aphid and mite eggs on dormant deciduous fruit trees. It is applied at the rate of two quarts to 100 gal. of water. It should not be followed by oil sprays within two or three weeks. Spray operators should be protected so that the spray does not come in contact with the skin, and clothes should be changed frequently if wetted. (*See* also Agricultural Research Administration.)

Bibliography.—Thomas E. Snyder, *Catalog of the Termites (Isoptera) of the World* (1949); Edward A. Steinhaus, *Principles of Insect Pathology* (1949); U.S. Department of Agriculture, *Trees: Yearbook of Agriculture 1949* (1949); Asa C. Chandler, *Introduction to Parasitology*, 8th ed. (1949).

Films of 1949.—*Mosquito—Public Enemy; The Cicada* (Castle Films).

(E. O. E.)

Entomology and Plant Quarantine, Bureau of: *see* Agricultural Research Administration.

Epidemics. No serious disease pandemics occurred in 1949. In the United States, decreases were recorded in the number of cases of pertussis, streptococcal infections, syphilis, bacillary dysentery, salmonellosis, meningococcus meningitis and pneumonia.

The rabies epizootic continued to spread in the United States, reaching from the Appalachian plateau in the states of New York and Pennsylvania to Texas. Intensive dog vaccination programs reduced rabies in dogs and humans, but wildlife, particularly the fox, was taking over the role of the chief mode of transmission.

In the United States, localized epidemics of Q fever extended to northern California, Washington and New York state. Further work was done regarding the role of raw milk and association with cattle as modes of transmission of this disease in southern California. Apparently, pasteurization is effective in rendering milk harmless as a means of spreading the disease to humans.

At the close of 1948 and extending well into 1949 there was an epidemic of jungle yellow fever in Panamá, an area from which no human cases of the disease had been reported since 1907. Heroic measures of *Aedes aegypti* eradication and mass immunization of the population resulted in the effective control of the outbreak. The epidemic recurrence of this disease in Panamá served as a warning that epidemiologists remain alert to the danger of the reintroduction of yellow fever into many areas long free of recognized human infection.

Poliomyelitis appeared again in serious proportions for the second consecutive year in the United States. The northeastern, central, north and south central states and California were especially involved, with the nation's total for the year reaching more than 40,000 cases, a record high and an increase over 1948 of approximately 15,000 cases. The large-scale epidemic of 1947 in Europe did not recur in 1949.

Influenza which appeared in Sardinia in Oct. 1948 spread to Italy, France, Austria, Bulgaria and the Netherlands by Jan. 1949. During the next few months, numerous cases appeared throughout Europe and the United States. This outbreak provided the first test of the World Health organization's Influenza centre, established at London in 1948, and the listening posts scattered in laboratories throughout the world. The centre recommended that throat washings and acute and convalescent phase serum from influenza cases be submitted to approved laboratories for determination of the strain of virus involved. On Jan. 12, the centre announced identification by the Institut Pasteur of a virus belonging to the A group as causing one-half of the cases in France. The centre was informed of the isolation of a similar virus from the southern area of the Netherlands, and later the strain was discovered in the United States. The virus was shown to be related to the A prime or FM1 strain epidemic in Europe and the United States during 1947.

During the 1947 pandemic, it became apparent that the stock vaccines then available, containing influenza viruses A and B, failed to be protective. Subsequently, the FM1 strain was added to all influenza vaccines; however, it was realized that antigenically different strains might appear from time to time, so that ideally it would be best to immunize the threatened population with the current epidemic strains. This was done in at least one area in 1949. In this episode, only ten days were required for the production of vaccine following the receipt by the laboratory of the throat washing containing the epidemic strain. During the pandemic of 1949, the prevalent influenza disease was mild, with a low case fatality. The success in securing speedy notification of the strain involved by the World Health organization was encouraging in the face of the possible later occurrence of a highly fatal pandemic of influenza with the necessity for the rapid preparation and world-wide distribution of specific vaccine. (*See* also Bacteriology; Entomology; Federal Security Agency; Public Health Services; Venereal Diseases.)

Bibliography.—Joseph A. Bell, M. Dorothy Beck and Robert J. Huebner, "Epidemiology of Q Fever in Southern California," read at the Annual Meeting of the American Public Health Association (Oct. 1949); K. O. Courtney, "A Report on the Recent Outbreak of Jungle Yellow Fever in Panama," read at the Annual Meeting of the American Public Health Association (Oct. 1949); *Chronicle of the World Health Organization*, 3:11–13 (Jan. 1949); 127–129 (June 1949); Irving Gordon, Sophia M. Cohen, Gladys M. Gnesh and Elinor Whitney, "Studies of a Freshly Isolated Strain of Influenza Virus A: Antigenic Analysis and Serologic Response to Subcutaneous and Intracutaneous Vaccination," read in abstract at the Annual Meeting of the American Public Health Association (Oct. 1949). (H. E. Hi.)

Episcopal Church: *see* Protestant Episcopal Church.
Eritrea: *see* Italian Colonial Empire.

Estonia.

From Feb. 24, 1918, to Aug. 6, 1940, when it was annexed by the U.S.S.R., Estonia was an independent Baltic republic. The British, U.S. and many other governments, however, had not by 1949 granted *de jure* recognition to this annexation. Area: 18,357 sq.mi. Pop.: (Jan. 1939 est.) 1,134,000, (Jan. 1946 est.) 854,000. The reduction is explained by the evacuation of 17,000 Germans in 1939–40, by the soviet deportation in 1940–41 of 62,000 people, by the fact that about 50,000 Estonians fled to Germany and 30,000 took refuge in Sweden when the soviet armies returned, and by a second wave of soviet deportations begun in 1944 (about 121,000 deported up to the end of 1945). Chief towns (1939 est.): Tallinn (cap., pop., 146,400); Tartu (60,100). Chairman of the supreme soviet of the Estonian S.S.R.: Edvard N. Päll; chairman of the council of ministers: Arnold T. Veimer.

History.—During 1949 the country came still further under soviet domination and state administration, the Estonian Communist party being permeated by Russians. The party purge begun in 1948 continued.

The total population of Estonia was estimated by mid-1949 at 1,300,000. This increase, however, meant both an absolute and a relative decrease of the native population. The influx of Russians was particularly important in towns. For instance, in Tallinn a total population of 165,000 included 70,000 Russians. A new mass deportation of about 40,000 people took place in the first half of 1949. (*See* also Latvia; Lithuania.)

At the beginning of 1949 about 88% of the party members were civil servants, 8% workers and 4% peasants, but as the forcible collectivization, which had been inaugurated in Aug. 1947, increased the grip of the party on the countryside, this disproportion was possibly reduced.

Päll proclaimed on July 21, 1949, that industrial production was double what it had been in 1939—no small achievement in a country where by 1944 war destruction had reduced the industrial production capacity to one-seventh. It had also been announced earlier that the volume of oil-shale production in 1948 was double the prewar yield. That would bring the production of oil-shale to 3,400,000 and of oil to 358,000 metric tons: the respective targets for 1950, however, were 8,400,000 and 1,000,000 tons.

According to N. G. Karotamm, 1,800,000 sq.mi., or 48% of the total housing space, had been destroyed during World War II. The construction target for 1950 was 1,100,000 sq.mi., which meant that a population increased by one-seventh was to be housed in a space reduced to four-fifths of that of 1939.

By mid-1949 the number of Lutheran clergymen had been reduced from 170 (in 1939) to 40. The Lutheran bishop August Pähn was deported.

Education.—The total number of pupils in elementary and secondary schools in 1949 was 156,000, including 24,543 members of the All-Union League of Communist Youth (Komsomol). The University of Tartu had in 1949 a staff of 450 professors and lecturers, while the students, more than half of whom were women, numbered 2,700.

Bibliography.—E. Howard Harris, *Estonian Literature in Exile* (London, 1949); E. Kareda, *Estonia in Soviet Grip* (London, 1949). (K. Sm.)

Etching.

The medium of etching, like all other branches of graphic art, continued in 1949 to gain in both volume of work and in public support, in the countries where practised to any considerable extent. Under the economic conditions of modern life that require smaller homes with less wall space for pictures and that impose strict limitations upon the average budget, prints of all kinds had grown in popularity and each year had found more and more people collecting them, public art galleries selling them and societies being formed among laymen and artists alike designed to foster and maintain their production and distribution.

This was particularly true in the United States. Of all the graphic media, however, etching followed, in 1949, its normal course of existence as an independent art with the least amount of change. Most exacting in its demands upon the intellectual power and discipline, as well as the technical skill of the artist, the so-called "modern" movement had done comparatively little to alter the traditional character of the etcher's art, even in countries where it had become such an important factor in all forms of creative expression. In the United States the teachings of Stanley W. Hayter, Mauricio Lasansky and Ernest Freed continued greatly to influence those etchers who found the modern idiom particularly sympathetic to their own styles and techniques.

The regular large national annual exhibitions took place, of which the two most comprehensive and representative as cross sections of American etching were that conducted by the Library of Congress and the annual exhibition of the Society of American Etchers, Gravers, Lithographers, and Woodcutters. Smaller exhibitions, along both national and regional lines, were held by such other long established print organizations as the Chicago Society of Etchers, the Print Makers' Society of California, the Prairie Print Makers, the Northwest Printmakers and the Print clubs of Philadelphia and Albany, while print dealers all over the country, as well as museums and libraries maintaining print rooms, held exhibitions covering all phases of etching and its sister arts.

The names of noteworthy practising etchers in the United States during the year were too numerous to mention at length. Best known among them, however, were Niels Y. Andersen, Will Barnet, Isabel Bishop, Cornelis Botke, Federico Castellon, John E. Costigan, Stephen Csoka, Ralph Fabri, Isac Friedlander, Sue Fuller, Arthur W. Hall, Eugene Higgins, Morris Henry Hobbs, Alfred Hutty, Philip Kappel, Gene Kloss, Armin Landeck, Jeannette M. Lewis, Martin Lewis, Helen A. Loggie, Luigi Lucioni, William Meyerowitz, Helen Miller, Roi Partridge, Margaret Philbrick, Carl M. Schultheiss, Reynold H. Weidenaar, R. W. Woiceske and George H. Wright.

The British school of etching, less affected by contemporary trends than any other national group, and maintaining its traditional standards both in approach and technique, presented the work of such long established artists as S. van Abbé, Sir Muirhead Bone, John Copley, Paul Drury, Martin Hardie, Westley Manning, Malcolm Osborne, W. P. Robins, Henry Rushbury, D. I. Smart, Robert Spence and Leonard R. Squirrell, s well as such regular exhibitors as Winifred Austen, W. D. Brokman-Davis, H. Andrew Freeth, Percy Lancaster, Gwen May, Sara Sproule, E. Heber Thompson, Murray M. Tod, Leslie M. Ward and the distinguished Hungarian etcher Julius Komjáti.

France, one of the great strongholds of etching, showed in 949 a group of etchers which had grown steadily stronger and more active since World War II. Contributing to the great Paris exhibitions as well as to smaller ones all over the country, were such veterans as Yves Alix, Maurice Asselin, Adolphe Beaufrère, Camille Berg, Jean Bersier, Jacques Beurdeley, Jacques Boullaire, Richard Brunck de Freundeck, Robert Cami, Gérard Cochet, Eugene Corneau, Pierre Dubreuil, Raoul Dufy, Jean Frelaut, Demetrius Galanis, Marcel Gromaire, Pierre Guastalla, Edmond Kayser, Henri Matisse, Pierre-Louis Moreau, Pablo Ruiz-Picasso, Alexandre Urbain, Henri Vergé-Sarrat, Jacques Villon and Henri de Waroquier. Younger artists of recognized significance were Michel Ciry, René Cottet, André Jacquemin and Pierre-Yves Trémois.

The veteran American etcher Herman H. Webster had long lived and worked in France.

In Canada, the Society of Canadian Painter-Etchers and Engravers held its usual annual exhibition, which was supplemented by numerous others throughout the country. Prominent among the artists working in etching and dry point were David J. L. Anderson, Robert W. Annand, R. F. Darby, I. Mackinnon-Pearson, Wilbur K. Peacock, E. B. Sisley, J. R. Tate, Fred B. Taylor, Harry D. Wallace and W. J. Wood.

Little was done in etching in Italy in 1949, though a few of the younger artists produced some interesting work, chiefly in the modern vein. Similarly, isolated examples appeared in Sweden, Norway, Denmark, the central European countries, Spain, Mexico and some of the South American republics, though in all of these the media of woodcut and lithography appeared more popular and nowhere among them was etching sufficiently widely practised to constitute a real national school.

(J. T. AR.)

Ethiopia.

An independent empire of northeastern Africa, Ethiopia is bounded on the north by Italian Eritrea, on the west by the Anglo-Egyptian Sudan, on the south by Kenya, on the southeast by Italian Somaliland and on the east by British and French Somaliland. Area: *c.* 350,000 sq.mi. Pop. (est. Dec. 1948): 8,000,000, but the ruling race, the Amhara, numbers about 2,000,000. Chief towns: Addis Ababa (cap., pop. *c.* 250,000); Harar (*c.* 45,000); Dessie (*c.* 35,000); Diredawa (*c.* 30,000). Languages: Amharic, the official language; also Tigriña, Tigré, Galla, Somali, etc. Religions: Christian (Alexandrine) 57%; Moslem 17%; pagan, etc., 26%. Ruler: Emperor Haile Selassie I.

History.—Throughout 1949 the political atmosphere was clouded by the continued failure of the United Nations to effect disposal of the former Italian colonies. Ethiopia's claim for the surrender as war criminals of Marshals Pietro Badoglio and Rodolfo Graziani also proved abortive, since Italy rejected its note and no other powers were disposed to press the matter. Ethiopia continued participation in other U.N. activities, and was the first country to ratify the genocide convention.

Internal politics were strengthened in two directions: in January the marriage took place between Princess Aida, granddaughter of the emperor, and Dejazmach Mangasha, son of Ras Siyum, hereditary prince of Tigré, two royal houses being thus united; and in July there was a considerable reshuffle of ministerial posts, most of the ministries being now provided with both a minister and a deputy minister.

Events of economic importance—though potential rather than actual—were the "spudding-in" of the first oil well in Ogaden in May; preparations for extensive cotton-growing in an attempt to reduce imports of cotton goods; and the start of inoculation of stock, on a large scale, against rinderpest and other cattle diseases, this with the assistance of experts from the Food and Agriculture organization of the U.N. In the financial sphere, a settlement of outstanding lend-lease accounts was announced in May. The Ethiopian dollar was not devalued in line with sterling. The exchange rate in Dec. 1949 was Eth. $2.53 = $1.00 U.S.

Communications were furthered by the opening in April of the rebuilt bridge over the Gibbe on the Jimma road; and in June the foundations were laid for a new bridge over the Blue Nile, on the road connecting Addis Ababa with Gojjam. The railway suffered interruption for several weeks in the summer through a strike of workers at Diredawa. Ethiopian Airlines, besides maintaining all their regular services, inaugurated some new ones to provincial towns in the south.

In education progress was normal. Of 26 candidates for London matriculation, 13 passed and were sent abroad for higher studies, most to England, where a society of Ethiopian students published its first magazine. The foundation stone of a University of Addis Ababa was laid in November. Books published in Amharic included first instalments of a revised translation of the Bible; a world history; and *Ethiopia and Western Civilization* by Kabbada Mika'el, director of the national library.

Education.—(Est. 1948) Elementary schools 390, pupils 35,000, teachers 1,350; secondary schools 3, pupils 450, teachers 30; technical schools 2, students 250, teachers 15.

Finance.—The monetary unit is the Ethiopian dollar with an exchange rate of 2.53 Eth. $=$1.00 U.S. (Dec. 1949). Budget (1947, in Ethiopian dollars): revenue 58,000,000; expenditure 58,000,000.

Foreign Trade.—(1947, in Ethiopian dollars, approximate totals): imports 69,035,000; exports 89,430,000.

Transport and Communication.—Roads (asphalted and macadamized) (1947): 15,500 km. Railway mileage: 406 mi. of the Franco-Ethiopian railway run through Ethiopian territory. Motor vehicles in use (Dec. 1947): total 5,520. Telephones in Addis Ababa: approx. 2,000 (1947).

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European Economic Cooperation, Organization for: *see* EUROPEAN RECOVERY PROGRAM; ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION.

European Movement: *see* EUROPEAN UNION.

European Recovery Program.

The process of enacting legislation providing for the second year of the European Recovery program began on Feb. 7, 1949, when bills were introduced into the house of representatives and senate authorizing a program of $1,150,000,000 for the final quarter of 1948–49 and $4,280,000,000 for 1949–50, or a total, inclusive of certain minor items, of $5,580,000,000. Somewhat earlier, on Jan. 2, the Organization for European Economic Cooperation, after reviewing and consolidating programs submitted by its members, had requested the slightly larger sum of $4,347,000,000 for 1949–50. Estimates presented by Economic Cooperation Administrator Paul Hoffman called for the following tentative allocation of funds (in millions) for 1949–50: United Kingdom $940; France $875; Italy $555; bizone Germany $404; Netherlands and Netherlands Indies $355; Belgium-Luxembourg $200; Austria $197; Greece $170; French Zone of Germany $115; Denmark $109; Norway $105; Ireland $64; Sweden $54; Turkey $30; Trieste $12; Portugal $10; Iceland $7.

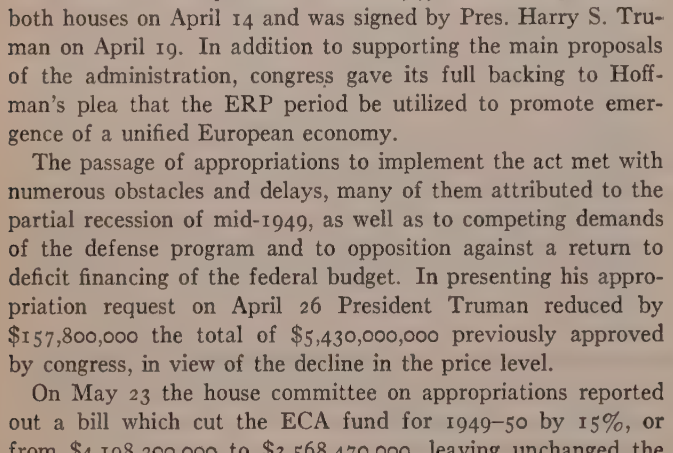
In joint hearings held by the senate committee on foreign relations and the house committee on foreign affairs, administration spokesmen emphasized that the program was designed to carry further physical reconstruction of damage inflicted by World War II, to promote resumption of international trade and adjustment of the European economy to postwar conditions and to foster the "development, rationalization and expansion of the economies" of Europe, for the general purpose of making western Europe economically and politically viable. On March 7 the senate committee, in reporting out its bill, recommended approval of the Economic Cooperation administration's full request of $5,580,000,000. A figure of $5,380,000,000 was proposed by the house committee on March 22.

After intensive debate, during which amendments reducing the total by 15% and 10% were rejected, the senate by 70 to 7 vote, on April 8, approved a bill allocating $5,580,000,000. On April 12 the house adopted a bill (354 to 48) approving a program of $5,380,000,000. The house bill also contained a provision for raising from $28,000,000 to $300,000,000 a guaranty fund for encouraging private U.S. investments in ERP countries. U.S. investments in these countries would be protected against losses through inability to convert dollar capital outlays back into free exchange, in addition to insurance, provided in the act of 1948, against losses through civil disturbance or confiscation and to inability to convert profits into dollars.

On April 13 a conference committee approved a bill fixing the aid program at $5,430,000,000, plus $150,000,000 for the guaranty fund for protection of U.S. investments abroad, thus in effect accepting the larger amount approved by the senate. The Economic Cooperation act of 1949 was then passed by both houses on April 14 and was signed by Pres. Harry S. Truman on April 19. In addition to supporting the main proposals of the administration, congress gave its full backing to Hoffman's plea that the ERP period be utilized to promote emergence of a unified European economy.

The passage of appropriations to implement the act met with numerous obstacles and delays, many of them attributed to the partial recession of mid-1949, as well as to competing demands of the defense program and to opposition against a return to deficit financing of the federal budget. In presenting his appropriation request on April 26 President Truman reduced by $157,800,000 the total of $5,430,000,000 previously approved by congress, in view of the decline in the price level.

On May 23 the house committee on appropriations reported out a bill which cut the ECA fund for 1949–50 by 15%, or from $4,198,200,000 to $3,568,470,000, leaving unchanged the allocation of $1,074,000,000 for the last quarter of 1948–49. Strong objections were raised against this reduction on the grounds that it would cut back seriously the program of reequipping European industry and would therefore jeopardize the chances of making the European economy self-sustaining after 1952. On May 26 the house adopted a compromise allowing the ECA, in the president's discretion, to expend the appropriation of $3,568,470,000 during the first 10½ months, instead of during 12.


THERE'S TALK IN AMERICA OF CUTTING DOWN EUROPEAN AID...
CRAWFORD

"BAD NEWS TRAVELS FAST," cartoon by Crawford of the *Newark News*, published in 1949

During these discussions ECA Administrator Hoffman emphasized the importance of increased U.S. investments abroad and of far larger U.S. importations of foreign goods as means for reducing the dollar deficit of the outside world, lessening the need of Europe for direct dollar grants and enabling Europe to balance its dollar trade in 1952. In putting into effect the investment guarantees for U.S. enterprises abroad, Hoffman pointed out that of the $300,000,000 of guarantee funds made available in 1948, only $4,000,000 had been drawn, and he again urged more intensive development of private investment abroad. In November ECA further liberalized governmental guarantees of convertibility of U.S. investments in ECA countries, to give protection to investments of unique productive techniques and processes; for this type of investment, as well as for actual transfers of dollar capital and equipment, the guarantee, based upon agreements between ECA and the investors, could be as high as 175% of dollar investment. In addition the ECA provided a guarantee of convertibility of profits from such enterprises, amounting to a 20% return on investment for each of the first five years of operation.

Implementing the administration's proposals for increased imports into the United States, ECA organized numerous missions of businessmen and technicians to acquaint European producers with the needs of the U.S. market and with distribution techniques. A joint field mission of ECA and the department of commerce urged that imports into the United States be increased by $2,000,000,000 a year and recommended a number of concrete measures to this end.

Meanwhile, passage of the ECA appropriation had met with continuing obstacles and delays, particularly in the senate. One amendment, pressed with great persistence, involved earmarking $50,000,000 for a loan to Spain. Another proposed amendment would have allocated $1,500,000,000 of ECA funds for the purchase of U.S. farm products which might be declared surplus by the secretary of agriculture, whether or not these commodities were the ones most needed for European recovery. As the debates continued, temporary spending authorizations were enacted repeatedly to permit ECA to operate, and in July the senate restored the appropriation of $1,074,000,000 for the final quarter of 1948–49, which its committee on appropriations had reduced to $1,000,000,000. After rejecting by narrow margins amendments concerning the loan to Spain and the compulsory procurement of surplus farm products the senate, on Aug. 8, passed a bill (63 to 7) allocating $3,628,380,000 for the 1949–50 program.

After strenuous negotiations a conference committee reached a compromise in September, setting the sum of $1,070,000,000 for the final quarter of 1948–49 and $3,630,000,000 for 1949–50, but omitting the house-approved provision which allowed the president to expend the total appropriation in ten and one-half months if, in his opinion, this was necessary in order to achieve the purposes of the program. The compromise bill, which passed both houses and received the president's signature, also provided for Export-Import bank loans up to $150,000,000 to members of the O.E.E.C., and contained provisions for $45,000,000 in military aid to Greece and Turkey, $912,500,000 for occupation and relief expenses in Germany, Austria, Japan and the Ryukyus, and $110,000 for the continuation of a joint congressional committee charged with watching over the operation of ERP.

The reduction in the ECA appropriation required numerous and difficult adjustments in the allocation of assistance among

European recipients, and Hoffman announced on Sept. 1 that responsibility for the division of ECA funds would henceforth rest with him rather than with O.E.E.C. In view of the rapidly worsening dollar situation which confronted Britain and the sterling bloc, the British government in July had presented a strong plea for an increase in its ECA allotment from the $923,000,000 contemplated in January to $1,518,000,000. The allotment, as announced by Hoffman, was distributed (in millions) as follows: United Kingdom $962; France $704; Italy $407; Western Germany (including French, British, U.S. zones) $348.2; Belgium-Luxembourg $312; Netherlands and Indonesia $309; Austria $174; Greece $163.5; Denmark $91; Norway $90; Turkey $61; Sweden $48; Ireland $47; Portugal $33; Trieste $14; Iceland $7. No funds were allocated to Switzerland, a member of O.E.E.C., since it had requested none and had also refused, on July 20, to sign with ECA an agreement similar to those signed by other participants in ERP.

The first step in the process of legislating for the third year of ERP was taken on Jan. 9, 1950, when President Truman proposed an allocation of $3,100,000,000 for 1950–51, compared with, for 1949–50, an original request for $4,200,000,000 and an actual appropriation of $3,630,000,000.

During 1949 the effects of ERP were felt in an accelerated recovery of Europe from the immediate consequences of war. British industrial output reached its highest point in history, averaging about 25% above the immediate prewar years. France reported an industrial production substantially above prewar, while agricultural output, after a series of poor harvests, was returning to the pre-1939 level. Italy reported that national income in 1949 reached 97% of 1938 and set forth plans for raising industrial production 6% and agricultural output 3% during 1950. Similar reports of progress in reconstruction were made by other recipient countries. While the modernization of European equipment was being promoted both by ECA dollar grants and ECA counterpart funds, a far greater investment was being made in each country from local currency resources.

The amount and use of ECA counterpart funds expanded greatly during 1949. Under agreements made with ECA each recipient government was to deposit in a special account amounts of local currency commensurate with the value of ECA goods delivered under dollar grants. These local currency funds could then be utilized within the country for purposes agreed upon between the government and ECA. An estimated $4,500,000,000 in counterpart funds had been deposited by late 1949; of this total $3,300,000,000 had been withdrawn, including $1,200,000,000 applied toward retirement of public debt and $1,700,000,00 toward increasing the productivity of industry and agriculture.

Great Britain had devoted its counterpart funds primarily to reducing the national debt, thus easing somewhat the fiscal burden left by the war. France devoted a large part of its counterpart funds to improving industrial equipment, particularly through constructing modern steelmaking and hydroelectric plants. In Austria and Greece attention had been devoted chiefly to restoring the system of transportation and communication. Smaller allotments had helped to provide inexpensive housing in several countries, to eradicate malaria in parts of Italy and Greece and to facilitate land reform, as in Italy. In many cases ECA had rejected proposals to use the counterpart funds to meet current outlays of administration, and the funds remained unused; in other cases it was difficult to select projects which would contribute to the long-range efficiency of the local economy without increasing immediate inflationary pressures within it.

As ERP moved toward its immediate goals of increasing production, reducing trade barriers and gradually restoring living standards, the more intractable nature of the long-range problems of the European economy stood out more clearly. With the terminal date of ERP set for June 30, 1952, Europe faced the more difficult problems of deciding what degree, and by what means, European integration could be achieved, of finding ways to cover the dollar gap in European trade and of adjusting to the approaching termination of ERP aid in 1952. (*See* also DEMOCRACY; EUROPEAN UNION; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION.) (P. E. M.)

European Union. The union of Europe, based upon common traditions and a heritage of common civilization, had inspired in the 19th and 20th centuries a number of leading European thinkers. What then seemed a distant idea, was brought closer to realization by the economic and strategic necessities of the period following World War II. Yet even then the question remained whether the deep social and cultural differences separating the various European peoples —differences in no way slighter than those separating the United States from Canada or Mexico—could be overcome by the realization of the necessity for a very new and very bold step. In spite of the great progress accomplished in the military and economic integration of Europe in the year 1949, the approach to a more far-reaching unification remained at the end of the year tentative and functional. The great difficulties opposing a fuller integration were realized as soon as the concrete economic and political problems were discussed.

This attitude of good will in principle and hesitation in practice prevailed in spite of the encouragement which United States policy gave more and more to the program of European union. The concern of the U.S. for an economic recovery and a social stabilization of Europe was one of the two mainsprings of all the progress achieved toward European unity. The other one was the aggressive policy of the U.S.S.R. which culminated in the Communist seizure of total power in Prague, Czech., in Feb. 1948. It may be said that without the policy pursued by Marshal Stalin after World War II all progress toward European union might have remained in the realm of hopes and wishes of a few intellectuals. It was the need for the defense of Europe and of European civilization against the totalitarian system spread from Moscow which helped to overcome at least some of the deep-rooted loyalties to national sovereignty in the various European nations and some of the animosities between them, the result of a long past of feuds and conflicts.

When the United States launched in 1947 what became known as the European Recovery program (*q.v.*), it was intended that all European nations, including the U.S.S.R., should participate in it and benefit from it. The U.S.S.R. objected strongly to any joint European program as it would infringe upon the sovereignty of the European states. Of the soviet satellites, Czechoslovakia first accepted the invitation to participate, and Poland inclined toward participation, but both finally rejected participation as did all the other nations within the soviet orbit. Thus, against the original wishes of the U.S., but in accordance with the real situation in Europe as it had developed after World War II, the division of Europe in two opposed sectors was made manifest. The eastern European nations which were within the "orbit" of the Soviet Union were economically and militarily woven into a closely integrated unit under the control and leadership of the Soviet Union. To these nations eastern Germany was added in 1949, while Finland was able to preserve its cultural personality and much of its political and economic independence, and Communist Yugoslavia was excluded from the soviet orbit because it did not wish to accept the "colonial" economic role of a mere granary assigned to it in the soviet plan. Thus all attempts at European union remained confined to the free nations of western and central Europe.

On Jan. 25, 1949, a Council for Mutual Economic Assistance was set up in Moscow. It included, beside the Soviet Union, Bulgaria, Czechoslovakia, Hungary, Poland and Rumania. This step on the part of the Soviet Union seemed a move to counter the European Recovery program of the United States, which got into full swing during 1948, and which was put into operation with the help of the Committee on European Economic Co-operation (C.E.E.C.). While thus the foundations were laid in 1948 for an economic integration of the free nations of Europe, a first step was also taken during that year for their military integration. On March 17, 1948, only three weeks after the Communist coup in Czechoslovakia, Britain, France and the Benelux countries (Belgium, the Netherlands, Luxembourg) signed a treaty of co-operation in the economic, military, and cultural fields for the duration of 50 years. For the first time sovereign nations set up in peace time a permanent organization for the co-ordination and fusion of military defense.

The year 1949 brought forth a definite progress on this road to European union. Many influential circles, above all in Italy, Belgium and France, stressed the need for the growth of a supranational European loyalty among the people themselves as the basis for a political integration of free Europe. On May 5, 1949, a date which may be the beginning of a historical development, ten European nations (Britain, France, Belgium, the Netherlands, Luxembourg, Denmark, Norway, Sweden, Ireland and Italy) signed the statute of the Council of Europe. The statute made it clear that any European country which accepted the rule of law and of enjoyment by all persons within its jurisdiction of human rights and fundamental freedoms could join. Matters of national defense were excluded from the scope of the council. Strasbourg, France, was made the permanent seat of the council, which consisted of two bodies: the Committee of Ministers, which could recommend measures to promote the aims of the council, and the Consultative assembly, in which the parliaments of the various member states were represented.

In its meeting at the beginning of August in Strasbourg the Committee of Ministers decided to invite three other nations, Greece, Turkey and Iceland, to join. Thus the dream of private organizations, like the European movement led by Winston Churchill (*q.v.*), found an official sanction. Duncan Sandys was the chairman of the Executive committee of this unofficial movement, the honorary presidents of which were Churchill, Alcide de Gasperi, Paul-Henri Spaak and Léon Blum, while the chairman of its International council was the veteran French trade union leader Léon Jouhaux. In his address in Strasbourg Churchill declared: "We have met in this ancient and war-scarred city to set up an assembly which we hope will one day become the Parliament of Europe. The first step has been taken, and it is the first step that counts. We are not here as the representatives of our countries or parties, but as Europeans walking forward hand in hand, and if need be, shoulder to shoulder. It is not against any race or nation that we range ourselves. It is against tyranny in all its forms. . . . We have in our long history wiped out the danger of religious wars and dynastic wars. I trust that we have reached the end of nationalistic wars. We hope and work for an age of peace and plenty when the unmeasured riches and genius of Europe will make her again the fountain of world inspiration."

The Consultative assembly had no powers. It could only make recommendations to the Committee of Ministers. Nevertheless the assembly of 101 delegates, representing 12 nations, made a number of sweeping recommendations. It established a 28-member standing committee under the chairmanship of Paul-Henri Spaak, the president of the assembly, to insure continuity of its work between the yearly sessions. It called upon the Committee of Ministers to prepare a program of a European economic union having a free money market and a single preferential trading system, embracing also the colonies of the member states. The creation of permanent machinery for consultation on credit policies, the investigation of European production with a view to reduction of non-European imports, the organization of European conferences of employers, workers and consumers, and finally, the sponsorship of a European convention on control of cartels were also suggested. The French delegate, Paul Reynaud, called for the merger of European economies into a single market and for the election of a European legislature by direct suffrage with authority to carry out such a merger. The General Affairs committee of the assembly was asked to report by April 30, 1950, on concrete steps for the creation of a union of European countries with limited powers over the governments of member nations.

Though the concrete achievements of this first "European parliament" were naturally meagre in view of its limited rights, nevertheless an assembly of leading statesmen and politicians of 12 European nations made its wishes for a further integration so clearly heard that they could no longer be completely overlooked. The assembly devoted much time to cultural questions and to the concern for the common heritage of freedom. A basic program of ten fundamental human rights was accepted as well as a far-reaching proposal, to supplement it by the creation of an international court of human rights to guarantee these basic freedoms in Europe, and an inquiry commission to screen and submit cases of violation to the court. The European governments were asked to undertake a systematic instruction of their peoples, "pointing out to them the undeniable advantage of union for Europe, and at the same time the dangers inherent in national isolation." It was also decided to consider the establishment of a European university at the assembly's next session in 1950. A conference of ministers of education of the 12 nations was asked to draft a plan for cultural co-operation and for pooling resources for scientific research and technical development. The European movement called a cultural conference to Lausanne, Switz., in Dec. 1949, where leading European intellectuals discussed the necessity for the formation of European thinking as a necessary condition for Europe's future political unification.

Events at the end of 1949 showed, however, that the further development of the European union would be slowed down. The Committee of Ministers, which met in Paris at the beginning of November, did not take any definite decision on the recommendations adopted by the Consultative assembly, but referred them to various committees for further studies. Among these assigned proposals were those for the admission of west Germany and of the Saar, for the convocation of the convention on human rights, and for the creation of a European court, and the alternative proposals for a European passport or for the abolition of passports. Germany and the Saar were to be admitted as associate members, that is, with representatives in the Consultative assembly but not in the Committee of Ministers. The committee took no action on a proposal for the admission of Austria as an associate.

On Dec. 19 the General Affairs committee of the Council of Europe met in Strasbourg to discuss various proposals for strengthening the European unity. It was decided at present to reject proposals for outright federation supported by France and Italy, and to consider only proposals for strengthening the existing council, as suggested by Britain and the Scandinavian countries which strongly favoured a "functional approach" by developing European co-operation along multiple lines.

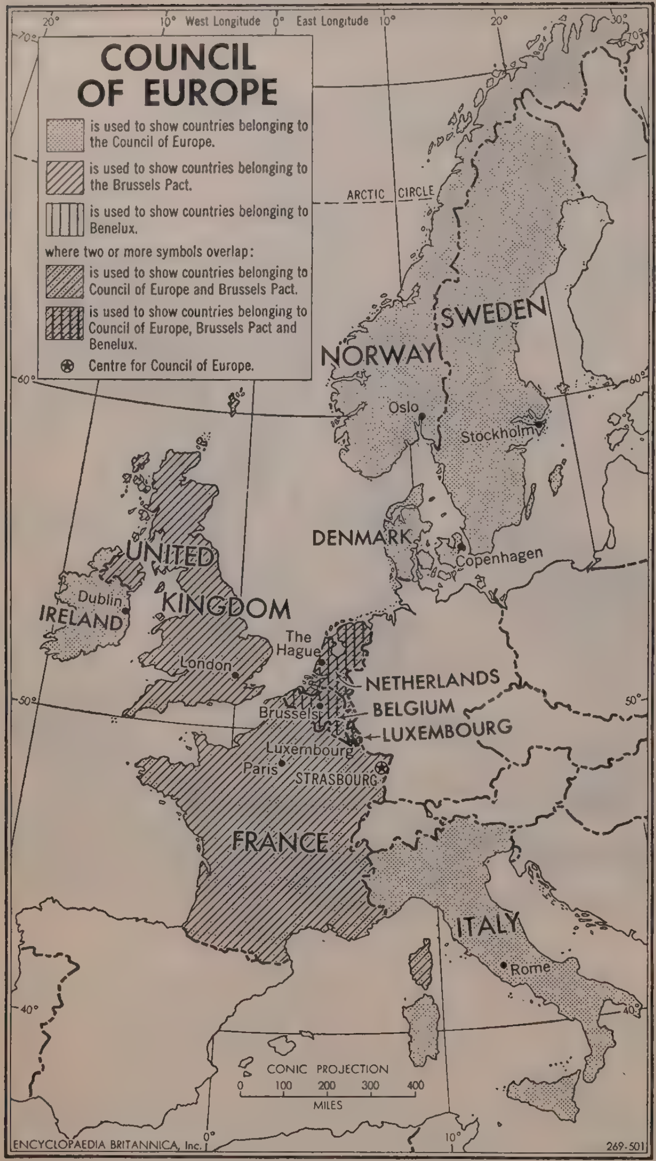
t was interesting to note that in a resolution, proposed by
British delegates, it was decided to make no recommenda-
n that might interfere with Britain's relations with the com-
nwealth, and to explore ways in which the Council of
rope and the British Commonwealth of Nations could co-
erate in political and economic matters. The acting chairman
the committee, Bertil Ohlin of Sweden, pointed out that the
uncil of Europe strove for mutual co-operation among demo-
tic nations all over the world and did not wish to turn the
uncil into a closed entity. This decision clearly pointed the
ed for a broadening of the basis of European union. Such a
oadening is in the nature of things, for Europe is not pri-
rily a geographic concept (the soviet satellites and Franco
ain were excluded from the European union, as conceived by
founders) but a unit based upon a common tradition of
itical liberty. These traditions are common to most European
tions, to the United States and to the British dominions. The
glish revolutions of the 17th century and John Locke, Charles
ntesquieu, the American Revolution, the French Revolution
d the Declaration of the Rights of Man and of the Citizen
m their common inspiration. Neither is the threat presented
Stalinism to the traditional freedom of the west directed
inst western Europe or North America alone, but against
h. The North Atlantic has become in recent times what the
editerranean was in antiquity. Even a European union cannot
ieve military and economic security without the participa-
n of the transatlantic democracies. This became clear beyond
ubt in 1949 when the centre of gravity of military and eco-
mic integration was definitely anchored in the co-operation of
United States, Canada and Europe. In this co-operation
ne European union found strength and inspiration. In the
litary field this co-operation expressed itself in the North
lantic treaty, in the economic field in the European Recovery
ogram and the Organization for European Economic Co-
eration.

Several European nations made attempts at closer economic
egration among themselves. Most advanced in that direction
re the efforts at creating an economic union among Belgium,
etherlands and Luxembourg, the Benelux countries. Some
inite progress was made toward this economic union, though
eat obstacles still remained at the end of 1949. A common
iff policy had been decided upon, though the combination of
Belgian specific protectionist system and the Dutch ad
lorem duties presented considerable difficulties. A joint sec-
ariate was set up in Brussels to deal with the remaining prob-
ns of different types of monetary and economic systems.
her economic unions, such as those between Italy and France,
between these two countries and Benelux, or between Britain
d Scandinavia, did not get beyond preliminary discussions. It
s under these circumstances that the United States, through
ul G. Hoffman, administrator of the Economic Cooperation
ministration (ECA), pressed in a talk on Oct. 31, 1949, for a
eater immediate economic integration of the European na-
ns who were recipients of aid under the Marshall plan. But
the end of the year it became clear that such an integration
uld be achieved only by stages, that British economy and
itain's relations with the commonwealth and the sterling area
esented special problems, and above all, that European eco-
mic problems could not be solved without similar measures
ning toward integration introduced by the United States itself.
wering of tariff barriers and of prices in the European na-
ns would presuppose the leadership of the United States in
h measures. It became evident that a sound economic basis
d to be constructed for the whole of western civilization, and
h a process would necessitate painful adjustments on all
es.

EDOUARD HERRIOT delivering the opening address at the first session of the Council of Europe in Strasbourg, France, Aug. 10, 1949

Greater progress than in the economic field was achieved in the military field. The North Atlantic treaty was signed in Washington, D.C., on April 4, 1949, by the United States, Canada and ten European nations. The pact was supplemented by the Foreign Military Aid bill, decided upon by the U.S. congress at the end of September. The Council established by the North Atlantic treaty held its first session in Washington in Sept. 1949, and made plans for common strategic planning and co-operation in the fields of training, procurement and rearmament. Five regions were established, the Northern European group (Great Britain, Denmark and Norway), the Western European group (the Brussels pact powers), the Southern European-Western Mediterranean group (France, Italy and Britain)—all three working with the active participation of the United States—the North American group (United States and Canada) and the North Atlantic Ocean group (all members except Italy and Luxembourg). The Council was the top-ranking body of the treaty, with its chairman rotating annually alphabetically by countries. Next to the Council was the Defense Committee, which was composed of the chiefs of staff, and under which there was the Military Committee and the Military Production and Supply Board. The key military unit in the whole edifice was the standing group, consisting of officers from the United States, Britain and France. By the end of 1949 these various committees and arrangements were slowly being worked out, thus providing the defense backbone for the integration of the European union. The Council of the North Atlantic Treaty created on Nov. 18 a defense, financial and economic committee to keep the military expenditures in line with the economic goals of the member nations.

The realization of the need of the Atlantic pact for the peace and integration of Europe was best attested by the attitude of


COUNCIL OF EUROPE
▦ is used to show countries belonging to the Council of Europe.
▨ is used to show countries belonging to the Brussels Pact.
▥ is used to show countries belonging to Benelux.
where two or more symbols overlap:
▨ is used to show countries belonging to Council of Europe and Brussels Pact.
▩ is used to show countries belonging to Council of Europe, Brussels Pact and Benelux.
⊛ Centre for Council of Europe.
10° West Longitude
0° East Longitude
ARCTIC CIRCLE
SWEDEN
NORWAY
Oslo
Stockholm
DENMARK
Copenhagen
UNITED KINGDOM
IRELAND
Dublin
London
The Hague
NETHERLANDS
BELGIUM
Brussels
LUXEMBOURG
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Paris
STRASBOURG
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ITALY
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those small European nations who had been for a long time renowned for their faithful adherence to peace and democracy and who had not known in recent times any desire for imperial expansion or aggrandizement. In spite of violent Communist opposition, the Norwegian parliament approved the pact on March 29, 1949, by 130 votes to 13. National elections which were held soon afterward confirmed this decision by an overwhelming popular vote which completely wiped out Communist representation in the Norwegian parliament and strengthened the Norwegian Labor party, which was primarily responsible for Norway's adherence to the pact. In a similar way the lower house of the Danish parliament approved on March 24 the nation's adhesion to the Atlantic treaty by 119 votes to 23. An amendment, proposed by the nine Communist deputies, which would have prevented the government from granting other nations bases on Danish territory, including Greenland, or from admitting any armed forces other than Danish to Danish soil, was voted down by the majority of 129 to 9.

Thus, in the year 1949 the free nations of Europe moved toward integration and union. Progress seemed slow, but, compared with what was regarded as possible only ten years before, it could be termed tremendous. The European nations, and with them the United States and Canada, faced, in their effort to secure the peaceful development of western civilization, a great many problems, not only political and economic, military and monetary, but also moral and spiritual. Many people in th United States believed that only by widening the bases of European union—either to a world federal government of fre nations desirous of assuring peace and human liberties, or to federal union of democratic nations on both sides of the Atlantic—its main purposes could be achieved. To that end resolutions, favouring world federation and favouring Atlantic union were introduced in 1949 in the congress of the United States The resolution for an Atlantic union, which took its startin point in the existing North Atlantic treaty, and the variou attempts to achieve a European union asked the president o the United States "to invite the democracies which sponsore the North Atlantic Treaty to name delegates, representing thei principal parties, to meet . . . with delegates of the Unite States in federal convention to explore how far their peoples and the peoples of such other democracies as the conventio may invite to send delegates, can apply among them, within th framework of the United Nations, the principles of free federa union." (*See* also EUROPEAN RECOVERY PROGRAM; NORTH ATLANTIC TREATY; ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION.)

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Events of the Year: *see* CALENDAR OF EVENTS, 1949, page 1–16.

Exchange Control and Exchange Rates.

Whereas in 1948 the world shortage of dollar exchange ha been progressively reduced by rising production and exports outside the U.S. as well as by more stringent control of imports this trend was sharply reversed in the second quarter of 194 Most countries experienced increasing difficulties in meetin their dollar requirements in spite of the continuance of large-scale U.S. financial aid. The causes of this change were many and ranged from the reappearance for the first time since Worl War II of a buyers' market for many commodities to the abatement of inflation in the U.S. at a time when significant inflationary pressure still persisted in various other parts of th world. The strain on the gold and dollar resources of th sterling area in particular became acute, and on Sept. 18, wit the approval of the International Monetary fund, the poun was devalued by 30.52% from 4.03 U.S. dollars to 2.80.

Changes in the exchange rates of many other currencies followed quickly, and by Nov. 15 the International Monetary fun had approved new par values for 14 of its 48 members. Of th others, Austria, China, Finland, Greece, Italy, Poland, Thailan and Uruguay had not yet established the initial par value o their currencies, while France continued, as in 1948, without par value agreed with the fund. In all of these countries, excep China and Poland, currency adjustments amounting to depreciation against the dollar were undertaken. Similar changes we also made in Argentina, Burma, Ceylon, Ireland, Israel, Ne Zealand, Portugal, Sweden and Western Germany, which we not members of the International Monetary fund. On the oth hand, Switzerland, most of the countries of eastern Europ Central and northern Latin America and several countries the middle and far east, such as Iran, Pakistan and the Republ of the Philippines, did not allow their currencies to deprecia against the U.S. dollar.

Despite these widespread and profound changes, exchang d import restrictions were maintained throughout the year in ost countries with the exception of the U.S., Switzerland and me Central American countries. Furthermore, many nations, pecially in Latin America, continued to operate multiple ex- ange rates to control imports and exports. Nevertheless, some ogress toward freedom of the exchanges was made, especially Belgium where the franc was made freely convertible on Nov. . In France and Italy also the currency depreciations of ptember were accompanied by substantial unification of the change rate structures. Similar steps were taken in Peru and araguay, but in the other Latin American countries which de- lued, *viz.*, Argentina and Uruguay, and which also employed ultiple exchange rate systems, the spread between the highest d the lowest rates was increased.

United States.—The relatively strong position of the U.S. llar—and the growing difficulties of foreign countries in meet- g their dollar requirements—clearly affected the U.S. balance payments. In the spring of 1949 the rising trend of U.S. ports of goods and services was reversed as a result both of duced volume and declining prices. The U.S. surplus on cur- nt account (goods and services), which had fallen to $1,205,- 0,000 in the third quarter of 1948, rose to $1,990,000,000 in e second quarter of 1949. In the third quarter of the year, rgely as a result of more stringent restrictions imposed on im- rts from the U.S. by many countries suffering from a shortage hard currencies, the surplus was reduced to $1,161,000,000. the first nine months of the year, the U.S. current account rplus totalled $4,811,000,000, and despite U.S. government ants and loans of $3,978,000,000 and $563,000,000 respec- vely, foreign countries had to draw upon gold and short-term llar assets to the extent of $591,000,000 to finance imports goods and services from the U.S. This was partly offset, how- ver, by a net inflow of foreign ng-term capital into the U.S. nounting to $122,000,000. oth of these figures include t dollar disbursements by the ternational Monetary fund d the International bank. The mainder of the U.S. surplus as financed by net U.S. private mittances of $412,000,000 and a net outflow of U.S. private ng- and short-term capital, nounting to $278,000,000. The eans of financing thus ex- eded the current account sur- us, leaving unidentified trans- tions of $889,000,000.

The upward trend of the U.S. ld reserves continued, from 24,398,000,000 at the end of 948 to $24,771,000,000 at the d of Aug. 1949. After the cur- ncy devaluations of Septem- r, however, fears of an even- al rise in the price of gold— belled groundless by U.S. offi- al spokesmen—led some coun- ies to prefer gold to dollar lances, and foreign purchases gold, for example by Italy d the Netherlands, brought e U.S. reserves down to $24,- 8,000,000 at the end of ctober.

Canada.—On Sept. 20, two days after the devaluation of sterling, the Canadian dollar, which had been at par with the U.S. dollar since July 1946, was devalued by 9.1%. The unofficial buying rate in New York city improved from an average of 1.082 per U.S. dollar in January to an average of 1.051 in the two weeks preceding the devaluation of sterling. Thereafter the disparity was practically wiped out for a time, but by the end of the year the free rate was again quoted at a small discount.

The overriding problem of Canadian trade and payments in the postwar years had been how to make the traditional surplus with Europe convertible to meet the payments deficit with the U.S. Payment of U.S. dollars by the Economic Cooperation administration for goods shipped to Europe under the European Recovery program eased the strain, but the vulnerability of Canada's position was clearly shown in the spring of 1949, when a cessation of these offshore purchases produced a crisis in Canadian trade. Between the end of March and the end of June the Canadian reserves of gold and U.S. dollars fell from U.S. $1,076,000,000 to $977,000,000.

Latin America.—Although monetary conditions were rather more stable in most Latin American countries than in the previous year, a considerable degree of inflationary pressure still persisted. Gold and foreign exchange holdings remained fairly steady for the area as a whole, and, unlike most other parts of the world, there were fewer exchange rate adjustments than in 1948. In fact, the improvement in terms of trade brought about by the European devaluations, supplemented by the steep rise in coffee prices toward the end of the year, strengthened the technical positions of most currencies of Central and northern South America. Whereas some of the latter countries, however, increased their holdings of gold and foreign exchange, the monetary reserves of others declined or were maintained at about

Foreign Exchange Rates

Note: Includes only currencies regularly quoted in New York during 1949. Averages of certified noon buying rates for cable transfers in cents per unit of foreign currency, corrected to two decimal places. The rates listed are mostly official rates; in many cases they were managed and supported by strict systems of exchange control. Therefore they did not always reflect the true exchange rates; neither were these properly reflected in the black-market rates.

The following members of the International Monetary Fund had not announced the initial par value of their currencies: Austria, China, Finland, Greece, Italy, Poland, Thailand, and Uruguay. Since January 26, 1948, no agreed par value existed for the French franc.

Country	Unit quoted and type of exchange	Annual average rate			Monthly average rate, 1949		
		1938	1947	1948	March	June	November
Argentina	Peso						
	Basic*	32.60	29.77	29.77	29.77	29.77	29.78
	Pref. A*	—	—	—	—	—	20.69
	Pref. B*	—	25.12	25.12	25.12	25.12	17.46
	Special*	—	—	20.00	20.00	20.00	13.90
Australia	Pound	389.55	321.00	321.22	321.21	321.00	223.16
Belgium	Franc						
	Official	3.38	2.28	2.28	2.28	2.27	2.00
	Banknote	—	—	—	2.10†	2.22	2.00
Brazil	Cruzeiro‡	5.84	5.44	5.44	5.44	5.44	5.44
Canada	Dollar						
	Official	—	100.00	100.00	100.00	100.00	90.91
	Free	99.42	92.00	91.69	93.26	95.52	89.86
Ceylon	Rupee	—	—	—	30.12	30.12	20.85
Colombia	Peso	55.95	57.00	57.01	—	—	—
Czechoslovakia	Koruna	3.47	2.01	2.01	2.01	2.01	2.01
Denmark	Krone	21.83	20.86	20.86	20.85	20.85	14.49
France	Franc	2.88	0.84	Off. 0.49	0.47	0.47	—
				Free 0.32	0.31	0.30	0.29
India§	Rupee	36.59	30.16	30.17	30.17	30.17	20.87
Mexico	Peso	22.12	20.58	18.86	14.33	11.91	11.57
Netherlands	Guilder	55.01	37.76	37.67	37.60	37.61	26.29
New Zealand	Pound	392.35	322.29	350.48	399.12	398.87	277.30
Norway	Krone	24.57	20.16	20.16	20.16	20.16	14.01
Republic of the Philippines	Peso	—	—	—	49.72	49.73	49.74
Portugal	Escudo	4.43	4.03	4.02	4.03	4.03	3.48
South Africa	Pound	484.16	400.74	400.75	400.75	400.75	278.38
Spain	Peseta	5.60	9.13	9.13‖	—	—	—
Straits Settlements	Dollar	—	—	—	47.08	47.19	32.55
Sweden	Krona	25.20	27.82	27.82	27.82	27.82	19.33
Switzerland	Franc	22.87	23.36	23.36	23.36	23.36	23.18
United Kingdom	Pound	488.94	402.86	402.86	403.11	402.85	280.08
Uruguay	Peso						
	Basic	64.37	65.83	65.83	65.83	65.83	—¶
	Pref	—	—	58.82	58.82	58.82	—¶
	Pref	—	56.24	56.18	56.18	56.18	—¶
	Pref	—	—	53.19	53.19	53.19	—¶

*Beginning Oct. 11, 1949, new designations were given to the rates shown previously, and the new special rate was introduced.

†Based on quotations beginning March 22, 1949.

‡Prior to Nov. 1, 1942, the official designation of the Brazilian currency was the milreis.

§Excludes Pakistan, beginning April 1948.

‖Quotations not available after Dec. 17, 1948.

¶Temporarily omitted.

Source: *Federal Reserve Bulletin.*

the same level only with the aid of various import and exchange controls, of which multiple exchange rate systems were the most striking type. Only Cuba, the Dominican Republic, El Salvador, Guatemala, Haiti, Mexico and Panamá operated without exchange controls.

Mexico, after maintaining the rate at between 6.85 and 6.95 pesos per U.S. dollar from Sept. 1948 through Jan. 1949, allowed it to depreciate gradually in free market operations to around 8.22, and on June 17 a new par value of 8.65 pesos per U.S. dollar was announced with the approval of the International Monetary fund.

Following the devaluation of sterling, four countries made important rate changes. Effective Oct. 3 Argentina readjusted her multiple rate structure. The preferential selling rate of 3.73 pesos per U.S. dollar, used for essential imports, was retained, but an additional preferential rate of 5.37 was introduced. The basic selling rate, applicable to imports of semiessentials, was devalued from 4.23 to 6.09, and the free selling rate, for authorized nontrade remittances, from 4.81 to 9.00 pesos to the dollar. Similarly the basic buying rate of 3.35, applicable to important exports, was retained, while new preferential buying rates for nonregular exports of 4.83 and 5.73 pesos to the dollar replaced the old preferential rate of 3.98, and a new special buying rate of 7.20 for exports of certain industrial goods replaced the old rate of 5. It was also planned to re-establish an auction selling rate for imports of luxury goods. Apart from the new free rate which represented a depreciation of 47% against the dollar, the effect of these changes was in general to devalue the peso by 30.5% against the dollar and, with some significant exceptions, to maintain the old sterling-peso relationship. The spread between the highest and lowest rates was therefore increased.

In Ecuador a decree issued on Dec. 31 provided for a depreciation of the export rate from 13.13 to 15 sucres to the dollar and for a reclassification of the imports to which the selling rates for essential, semiessential and luxury goods were to be applied.

In Paraguay new rates established in November effected a substantial devaluation of the guaraní against the dollar for most transactions and a considerable simplification of the rate structure. The old official rate of 3.12 guaranies per U.S. dollar was retained for essential imports and three new import and export rates set up, ranging from 4.92 to 8.05 guaranies to the dollar. Previously there had been about 40 effective export rates and a smaller number of import rates. The 4.92 export rate covering 90% of exports represented a devaluation against the dollar of 25–38% depending on the pre-existing rate.

On Nov. 14 Peru announced a new exchange rate system involving the temporary abandonment of the old parity, the adoption of a fluctuating rate and a simplification of the rate structure. Under the new system all trade transactions were to be conducted at the free certificate rate (which had stood at 16.18 soles per U.S. dollar on Nov. 5), and a free rate without certificates was applicable to nontrade transactions. All exporters received certificates for the full value of their products whereas previously this had been true only of exporters of mining products and exporters to the sterling area. Certificates were sold to importers who must obtain them to the full amount of exchange they required. The system prevailing before Nov. 14 had resulted in certificate dollar-sterling cross rates as low as $3.03 in April, but after the devaluation of sterling this disparity practically disappeared.

On Oct. 6 Uruguay introduced a new series of rates. The new system retained the old basic buying and selling rates of 1.52 and 1.90 pesos per dollar respectively, the former applicable to wool, wheat, meat and linseed, the latter to general imports amounting to about 75% of the total. Two new buying rates of 1.78 and 2.35 pesos were established for other exports and an additional selling rate of 2.45 for luxury imports. Nontrade transactions continued to be conducted at the free rate, which was subject to stabilization by the central bank. The new system reduced the number of rates in effect but increased the spread between the lowest and highest. Maximum devaluation against the dollar was about 28%.

The Sterling Area.—The exchange control system instituted at the outbreak of World War II and placed on a more permanent basis in the United Kingdom by the Exchange Control act of 1947 was maintained practically unchanged throughout the year. Furthermore, no country entered or left the sterling area in 1949.

In the latter half of 1948, the dollar deficit of the sterling area had been more than covered by ECA assistance, and the central reserves of gold and dollars increased from $1,733,000,000 at the end of Sept. 1948 to $1,874,000,000 at the end of March 1949. Nevertheless, the international economic position of the United Kingdom remained extremely vulnerable. The large prewar net income from investments abroad had not been restored, and government expenditure overseas was still a heavy burden. Various other factors also contributed. The price of gold, an important dollar earner of the overseas sterling area, had remained unchanged in the face of a rise of about 100% in the prices of exports from the dollar area. Furthermore, apart from the South African gold loan of £80,000,000 to the United Kingdom in 1948, which was repaid in sterling in 1949, the gold production of the overseas sterling countries and the proceeds of their exports to the dollar area did not, as in prewar years, yield a net surplus with which the United Kingdom could cover its deficit with the western hemisphere. Instead, these countries, taken as a group, were now net claimants on the central hard currency reserves rather than net dollar earners, and the United Kingdom surplus with them was made up largely of unrequited exports financed by releases from accumulated sterling balances and other capital transfers. In the first nine months of the year sterling releases totalled the equivalent of $830,000,000 and were equal to one-seventh of all United Kingdom exports.

In the second quarter of 1949, while imports of sterling area countries from the dollar area increased, their exports to that area fell both in price and in volume, and the drain on the central reserves reappeared. The position of sterling was further weakened by the spread of cheap sterling transactions in which the pound was traded at rates below $3. In the first half of 1949 the total gold and dollar deficit of the sterling area amounted to $963,000,000, of which $617,000,000 was on the United Kingdom account and $173,000,000 on the account of the rest of the sterling area. The remaining $173,000,000, representing payments in gold and dollars to countries outside the dollar area, notably Belgium, Switzerland, Western Germany and Iran, could not be allocated between the United Kingdom and the other sterling area countries. Since ECA aid ($669,000,000), drawings by the United Kingdom on the Canadian credit ($56,000,000) and by India on the International Monetary fund ($31,700,000) were insufficient to cover the deficit, the central reserve declined by $206,000,000.

A conference of British Commonwealth of Nations finance ministers on the subject of the dollar drain was held in July, and it was agreed that the necessary steps should be taken to cut imports from the dollar area by 25%. Further measures to alleviate the position of sterling, notably by increased U.S. and Canadian purchases from the British Commonwealth of strategic materials such as tin and rubber, and by the broader use of ECA funds for purchases in Canada, were announced after the U.S.-Canadian-British talks held in Washington, D.C., at the beginning of September. The growing opinion that devaluation was imminent, however, led importers in the dollar area both to delay payments and withhold new orders for sterling area products. Finally, with the reserves dropping below $1,400,000,000, he exchange rate of the pound was reduced by 30.52% from $4.03 to $2.80 on Sept. 18. The new rate was effective in all he British dependent overseas territories except British Honduras. Similar readjustments were made, either simultaneously or in the following days, in the exchange rates of all the other currencies of the sterling area with the exception of Pakistan, which, thanks largely to its exports of jute, maintained a comparatively strong position vis-à-vis the dollar area. On Dec. 31 a new par value of four British Honduras dollars to one British pound was announced with the approval of the International Monetary fund and the previous relationship between the two currencies restored.

Prior to devaluation sterling had been quoted in various financial centres at free rates equivalent to substantially less than $3. The disparity disappeared with devaluation, but by the end of the year free sterling was again being quoted at discounts exceeding 10%.

Continental Europe.—The dollar shortage persisted in most European countries except Switzerland, which continued without foreign exchange control. Not all countries were affected equally. Thanks to ECA aid and receipts of gold and convertible exchange from countries outside North America, Belgium and Italy, for example, were able to add to their gold and foreign exchange holdings. There was a striking improvement in the monetary position of France, and a reappearance of substantial exports from Western Germany.

Within Europe the unbalanced position of some countries continued to cause difficulties which were, however, mitigated by the European payments scheme organized in 1948 within the framework of the European Recovery program. In Sept. 1949 the scheme was renewed with some modifications, but it soon appeared likely that the distribution of drawing rights established would have to be revised, since the varying degrees of devaluation appeared likely to reduce the imbalance in trade among the ERP countries and change the net creditor and debtor positions of different countries.

A significant step towards the removal of exchange restrictions was taken in mid-November, when the Belgian franc was made freely convertible into Swiss francs and U.S. dollars. Discussions also took place concerning the easing of transfer restrictions among various groups of countries, notably France, Italy and the Benelux countries, but by the end of the year little had been achieved save some reductions of import quotas.

Western and Northern Europe.—Alone among western European currencies the Swiss franc was not devalued. With gold and dollar assets exceeding $2,000,000,000 at the end of August and increasing to such an extent that the monetary authorities had refused to convert dollar assets and adopted a gold sterilization policy to control the inflationary effect of an inflow of foreign exchange, there was no need to change the official parity. However, shortly after sterling devaluation the central bank decided to buy all dollars at the official rate, and the finance dollar market, in which the dollar had been quoted at a discount of about 8%, disappeared.

Denmark, Finland, Norway and Sweden followed sterling and devalued their currencies by 30.5%. Finland was in a somewhat special position. Faced with high domestic costs and declining export prices for pulp and other wood products, its principal exports, it had previously devalued its currency by 15% on July 5. Thus in the latter half of the year the markka lost 41% of its dollar exchange value, falling from 136 to 231 to the dollar.

The Netherlands also reduced the par value of its currency by a similar ratio, 30.2%, to 3.80 guilders per U.S. dollar. In an effort to stimulate exports to the western hemisphere the Netherlands allowed Dutch exporters to retain 10% of their dollar earnings. The Belgian franc, on the other hand, which had been in a relatively strong technical position since World War II, mainly as a result of Belgium-Luxembourg's continuing favourable balance of payments position with other European countries, was devalued by only 12.3%.

Preliminary estimates of the French balance of payments during the first half of 1949 placed the deficit of the French union with the rest of the world at an annual rate of roughly $900,000,000, compared with about $1,700,000,000 in 1948. The deficit with the dollar area was probably at an annual rate of about $800,000,000 compared with over $1,000,000,000 in the previous year. Internally, prices were stable or declining until August. The growing strength of the franc reflected this improvement in the internal and external financial position of the country. By April the black market dollar rate had dropped from above 500 at the beginning of the year to about 350. The revision of the exchange rate system of Oct. 1948 was maintained, with minor modifications, through Sept. 19, 1949. On the basis of this system noncommercial transactions in U.S. dollars, Swiss francs, Portuguese escudos, and, from June 10, Belgian francs, were carried out at the free market exchange rate (which moved slowly upward from 314.80 fr. to the dollar in January to 330.60 in September), while commercial transactions in these currencies and all transactions in other currencies took place at the average of the free market and the official rate (214.71 fr. to the dollar).

Following the devaluation of sterling the franc was devalued on Sept. 20, and the exchange rate system unified. This adjustment came at a particularly inopportune moment since prices had begun to rise again in August as a result mainly of the summer drought, and concurrently union demands for wages grew. From Sept. 20 all transactions were conducted at the equivalent of the free market rate for the dollar, which was initially at 350, but thereafter appreciated slightly. Thus for noncommercial transactions in hard currencies the franc depreciated by only 5.7% in terms of the dollar, while for all other transactions it depreciated by 22.3% in terms of the dollar and appreciated by 11.9% in terms of sterling. The free market rate continued to be controlled by the French monetary authorities, who could influence the demand for hard currencies by regulating the volume of import permits issued, or could themselves intervene in the market.

Within the franc area there continued to be different rates, in colonial French Africa (C.F.A.), where one franc C.F.A. was equal to two metropolitan francs, and in the French territories in the Pacific (C.F.P.) where one franc C.F.P. was equal to 5.5 metropolitan francs.

The currencies of both occupied countries, Austria and Western Germany, were reduced by a smaller percentage than sterling. On Sept. 19 the deutschemark was devalued by 20.6% from 3.33 to 4.2 per U.S. dollar. Although the official rate of 10 Austrian schillings to the dollar had been in effect since the end of the war, most commercial transactions with Austria had been carried out at premium rates, the premiums varying widely according to the commodities and currencies involved. Effective Nov. 22 the official rate was reduced to 14.40 schillings per U.S. dollar and the system considerably simplified. All export transactions were to be conducted at an effective export rate of 21.36 schillings to the dollar (applicable to luxury imports and noncommercial transactions), and the effective export rate (applicable to all other imports).

Southern Europe.—In Italy the system of exchange rates introduced in 1947 and modified on Nov. 26, 1948 to peg sterling quotations to the dollar at the cross rate of $4.03 per pound sterling continued in effect until the devaluation of sterling. Thereafter the procedure by which exporters sold half their foreign exchange proceeds at the official rate and half at the free rate while importers carried out all transactions at the free rate was continued. The official rate was now determined daily, however, by the average of the closing free market quotation in Rome and Milan rather than monthly by the average free rate in these markets for the previous month. Thus a wide differential between the official and free rates was hardly possible any more. The lira was then allowed to depreciate from 575 to about 628 to the dollar in the free market—which the monetary authorities controlled in much the same way as in France. Thus the lira depreciated by about 8% in relation to the dollar and appreciated by about 32% in relation to sterling.

For more than a year internal monetary stability had been maintained in Italy, and a rapid expansion of exports had been achieved. This, together with ECA-paid shipments coming in at an annual rate of over $300,000,000 and substantial incomes from tourism, resulted in Italy's becoming, like Belgium, a creditor in its relations with most European countries and even substantially increasing its reserves of gold and dollars.

The Italian currency adjustment brought some new problems. For example, whereas Italy had accumulated large amounts of sterling since the agreement of Nov. 26, 1948, after the devaluation of sterling Italian exports of fruits and vegetables to the United Kingdom were reported to have slumped badly.

In Greece the official rate for the drachma of 5,020 to the dollar and the certificate system of exchange rates under which exporters sold foreign exchange certificates to importers in the open market remained in effect. Before the devaluation of the pound sterling, exchange certificates were quoted at a level which gave an effective sterling-dollar cross rate of about $3.20 or 79% of the official parity. Effective Sept. 22, however, the Bank of Greece announced new certificate rates (which could be controlled through the issuance of permits for the purchase of foreign exchange) giving effective exchange rates of 15,000 drachmas to the dollar and 42,000 to the pound. This change represented a depreciation of 23.8% with respect to sterling and of 33.3% with respect to the dollar and eliminated the disparity in the dollar-sterling cross rate.

On Sept. 22 Portugal devalued the escudo by 13.1% with respect to the dollar so that its currency appreciated by 25% with respect to sterling. The major reason for this step probably lay in its balance of payments position vis-à-vis the sterling and dollar areas.

After the devaluation of sterling Spain retained its basic buying and selling rates of 10.95 and 11.22 pesetas to the dollar respectively but altered its various special import rates by 30.5% and its special export rates by amounts varying from 7 to 42%. The spread between the basic rate still used for certain imports deemed essential and the highest special rate thus widened substantially.

Eastern Europe.—The exchange rates of Albania, Bulgaria, Czechoslovakia, Hungary, Poland, Rumania and Yugoslavia, like that of the U.S.S.R., remained unchanged throughout the year. On May 24 the existing exchange rate of 50 Yugoslav dinars per U.S. dollars was approved by the International Monetary fund. These countries continued to conduct practically all their foreign trade through state-owned agencies whose operations were determined by the needs of their domestic economic plans rather than by considerations of profitability in terms of domestic currencies. Thus their exchange rates had little influence on either the volume or direction of their foreign trade.

Middle East.—There was little change in exchange control regulations in the middle east in 1949. Besides Iraq—which remained within the sterling area—two former members of that group, Egypt and Israel, followed the British example and devalued their currencies by 30.5%. In both cases the prime motivation for the action lay in the importance of sterling in their foreign exchange assets and in their dependence on the sterling area as a market for their exports. As regards Israel the devaluation hardly affected imports and financial transactions with hard currency countries since these had been conducted at buying and selling rates of U.S. $3.015 and U.S. $2.986 per Israeli pound ever since the new state had been established. The other middle eastern countries, Iran, Lebanon, Syria and Turkey, did not change the par values of their currencies despite the close relations (especially of Iran and Turkey) with sterling and the orientation of much of their trade to countries which did devalue.

Iran made some changes in its certificate exchange rate system. From Jan. 16, 1949, three rates were in use. The official rate, 32.50 rials to the U.S. dollar, was applicable to government requirements, imports of sugar and, from Feb. 13, to nontrade receipts. The Anglo-Iranian Oil company purchased rials for local expenditure at the buying rate of 32 per U.S. dollar. The official plus certificate rate, which declined from 53.88 rials to the dollar in January to 46.19 in October, was used for all other imports except machinery and essential consumers' goods. In addition to rials at the official rate, certificates were issued to exporters and could be sold in the free market to importers or others authorized to buy foreign exchange. After the devaluation of sterling, the certificate rate for the pound dropped to around 112 rials to the pound, giving a dollar-sterling cross rate of U.S. $2.44.

Syria and Lebanon, with identical monetary units and a common bank of issue, also maintained the existing official par values of their currencies. To encourage exports a regulation was issued, effective Sept. 26, restricting the use of the official rate to 10% of the proceeds of nontrade transactions.

China.—In May the exchange clearance certificate system was abolished and an exchange deposit certificate system introduced, under which deposit certificates were issued, amounting to 80% of the foreign exchange deposited with the central bank or appointed banks. These certificates, which also served as import licences, were sold in the open market to those desiring exchange. In a further effort to halt the runaway inflation a new currency unit, the silver yuan, was established. Its exchange value was set at 1.55 to the dollar but was subsequently reduced to 1.45. However, the rapidly deteriorating political and military situation rendered all attempts at monetary and financial stabilization futile.

Thailand.—In September a new official rate of 12.5 baht to the dollar and 35 to the pound was established, representing a depreciation of 20.6% against the dollar and an appreciation of 14% in relation to sterling. Exporters of rice, rubber and tin were required to sell varying portions of their exchange proceeds at the official rate and were allowed to dispose of the remainder in the free market.

As regards imports the official rate was applicable almost exclusively to fuel oil. Other payments were made through the free market at 21–22 baht to the dollar. Before the devaluation of the pound free market sterling was quoted at 62 to 66 baht, giving a dollar-sterling cross rate of $2.81 to $3.06. Thereafter, however, the disparity narrowed, the free rate dropping to [illegible] baht, giving a cross rate of $2.64.

Philippines.—The import restrictions imposed toward the end of 1948 did not have the desired effect, and despite U.S. aid estimated at about $200,000,000 excluding U.S. army and navy expenditures, foreign exchange reserves declined from $400,000 oo at the end of 1948 to $279,000,000 at the end of Sept. 949. To halt the drain more drastic import controls were inroduced at the end of November, and effective Dec. 9 a licence rom the central bank was required for all transactions in gold nd foreign exchange.

Japan.—On April 25 an official exchange rate of 360 yen per .S. dollar was established for all foreign exchange transactions ermitted. For important export products such as textiles, this ad the effect of devaluing the yen. (*See* also European Reovery Program; Gold; International Trade; Tariffs.)

(A. Ste.)

xhibitions, Livestock: *see* Shows, Animal.

xistentialism: *see* Philosophy.

xploration and Discovery.

During the year 1949 a considerable number of xploration expeditions were in the field. Although the chief bjects of these expeditions were not geographical exploration, n the sense in which such exploration was carried out a century efore, nevertheless the main motives were scientific and the xpeditions did in fact often add to geographical knowledge. he principal geographical features of the earth's crust are by ow fairly well understood, and only occasionally does an xpedition seek to answer a primarily geographical question as, or example, the expedition which sought to establish whether lexander I Land was or was not an island. However, an normous amount of data is required from remote regions, and ost expeditions had representatives of one or more sciences to tudy particular problems.

The scientific data obtained by expeditions such as these genrally are not available in detail until published in the scientific iterature, often a year or two after the expedition has returned. t is therefore in general possible in this summary only to cite he fields investigated during 1949 and not the detailed results. urther, there were various other expeditions in addition to hose cited, about which either less information was available r only one or two scientific objectives were included among onscientific activities, and which have therefore been omitted rom this summary.

In the polar regions, comparatively little activity was maniest in connection with the north pole. Routine flights for the urpose of gathering meteorological information were conducted orthward from Alaskan air bases, and it was assumed that imilar flights were conducted from bases in Siberia, although o exact information on these flights was available. On the ther hand, in the region of the south pole, considerable activity as in progress. Late in the year, a large Norwegian-British-wedish antarctic expedition started for the antarctic continent. he expedition had with it meteorologists, glaciologists, geoloists and biologists. It proposed to undertake exploration of ueen Maud Land.

In Alaska, Bradford Washburn, director of the Boston Mueum of Science, tested the possibility of supplying an expedition to Mt. McKinley by air, including the use of helicopters. his mountain, the highest on the North American continent 20,300 ft.), had been climbed and studied on previous expeditions. Assisted by the U.S. army and air force and by the ffice of naval research, Washburn showed that it was feasible o land helicopters on the sides of the mountain, and to provision and supply an expedition by supplies dropped from the air.

S. Dillon Ripley, 2nd, of the Peabody museum of Yale uniersity conducted an expedition to Nepal. Very few foreigners ad ever been allowed to enter this country. Ripley obtained ome important new ornithological data, and also succeeded in hotographing the Himalaya from a new angle.

Hassoldt Davis and his wife conducted an expedition into the Tumuc-Humac mountains in the southern part of French Guiana. These mountains lie along the border between French Guiana and Brazil, and had never been more than superficially explored. The expedition was sponsored by the United Nations Educational, Scientific and Cultural organization at the invitation of the French government, and brought back unique photographs of tribal customs in the interior.

ELEPHANT carrying a party of explorers into valley fastnesses of the Himalayan kingdom of Nepal, formerly inaccessible to western scientists. The 1948–49 expedition was sponsored jointly by the National Geographic society, Yale university and the Smithsonian institution

Sponsored by the Brazilian government, the Roncador-Xingu expedition continued its work in the interior of Brazil. The expedition was stimulated by Minister of the Interior João Alberto Lins de Barros, and by Frederico Hoepken, and the advance party was led by Orlando Villas Boas. This party did some exploratory work on the Manitsauá-miçu river. They surveyed the regions of the Peixoto do Azevedo, Cristalino, São Benedito and Cururú-açu rivers. They located places where air fields could be built. The main purpose of this expedition was to do the pioneer work in the deep interior necessary to open up this region to air routes and to the advance of civilization. A large operation, it had been in the field for several years, planned to continue for several more years, and had many branches under the leadership of various competent and vigorous scientists.

Sponsored by the American Geographical society, Maynard Miller explored the Patagonian ice fields to study the rate of recession or advance of glaciers.

Matthew W. Stirling led a National Geographic Society-Smithsonian expedition into the interior of Panamá to study the customs of the Indian tribes in the interior.

In Venezuela, William H. Phelps, Jr., accompanied by C. B. Hitchcock, acting director of the American Geographical society, ascended the summit of the hitherto unclimbed Mt. Parú, starting from San Fernando de Atabapo on the Orinoco, and intensively explored the mountain and its environs. The mountain is one of the type characteristic of that region, with a flat top and steep sides. The expedition did considerable mapping, and had ornithology as one of its objectives. The problem of bird distribution was studied, since these isolated mountains have flora and fauna differing from those to be found in the parts of the main chain of the Andes at the corresponding altitudes. The expedition also located and described more than 80 new plants and botanical specimens.

Prince Peter of Greece and Denmark started on an expedition to the Pamirs and Outer Mongolia to study tribal customs in that region. By Dec. 1949 his expedition was in the field and no word on its achievements had yet been received.

The American Museum of Natural History expedition to Afghanistan, led by Walter A. Fairservis, Louis Dupree and Henry W. Hart, located the ruins of Peshawarun. This ancient city, dating from the time of Alexander the Great, had eluded discovery for many years. At one time more than 100,000 people lived there. It was on an old trade route between India and the Tatar empire in central Asia. The site is located in southwestern Afghanistan. It appeared probable that it was abandoned because the Helmand river shifted its course and left the city without water.

The Swiss Himalayan expedition made renewed efforts to scale previously unclimbed mountains in India.

In a sphere called a "benthoscope," Otis Barton descended to a depth of about 4,500 ft. below the surface of the ocean off southern California and obtained new data on icthyology and other phases of marine life. In the other direction, exploration of the upper atmosphere progressed, with a continuation of the rocket-flight series at White Sands, N.M., initiated several years before. Several of the captured German-type V-2 rockets had ascended more than 100 mi., the record ascent still being that of Dec. 17, 1946, which reached 114 mi. A smaller rocket ejected from the nose of the large one reached an altitude of about 150 mi. These rockets carried meteorological instruments as well as cameras, ozone meters, sunshine recorders, solar spectrographs and cosmic-ray equipment. In addition, the rockets usually were equipped not only for telemetering performance data but for measurement of any variables which were adaptable to transmission by short-wave radio. Much new information about the pressure, temperature and composition of the upper atmosphere as well as cosmic radiation, solar ultra-violet and amounts of ionization had been obtained, and it was found that this region was much warmer than had been previously believed. Balloon flights using instrument-carrying (unmanned) balloons were extensively used in many parts of the world. Quite a number of these attained altitudes of more than 100,000 ft.

The Blue Dolphin expedition of the Arctic Institute of North America in co-operation with the Smithsonian institution, the office of naval research, the Woods Hole Oceanographic institute and the Canadian geographical bureau, took the schooner "Blue Dolphin," fitted with recording fathometer, bathythermograph, hydrographic winches and other equipment, for a study of hydrography, oceanography and biology through the Strait of Belle Isle and the coastal water of Labrador.

A French expedition under the leadership of Paul-Émile Victor was at the close of the year occupying the station at Eismitte, in the centre of the Greenland ice cap, observing meteorology and atmospheric electricity. The expedition had studied glaciology especially in the ablation zone. It was expected that eight men under the leadership of Robert Guillard would stay over the winter of 1949–50 and that Victor would return to Paris to organize the antarctic branch of the Expéditions Polaires Françaises.

The New Zealand-American Fjordland expedition sponsored by the New Zealand government, the American members of which were O. J. Murie and J. K. Howard of Boston, Mass., conducted explorations and mapping and studied the ecology, flora and fauna in the fjords of the southwestern corner of the South Island of New Zealand, especially in Caswell sound an the region between the sound and Lake Te Anau.

The U.S. navy medical expedition to Africa went from Cairo Egypt, to the Cape of Good Hope to study tropical diseases The expedition went up the Nile, through the Anglo-Egyptia Sudan, to Nairobi, Kenya. Thence a part of it went east t Mombasa, Kenya, and Madagascar, another part west to th Congo; upon returning to Nairobi the expedition continue south through Tanganyika to Capetown, Union of South Africa The chief medical officer was Comm. Julius M. Amberson. Th expedition obtained extensive new data on the incidence an prevention of diseases in that area. (*See* also ANTARCTICA ARCHAEOLOGY; COAST AND GEODETIC SURVEY, U.S.; GEOGRAPHY; MARINE BIOLOGY; NATIONAL GEOGRAPHIC SOCIETY OCEANOGRAPHY; SMITHSONIAN INSTITUTION.)

FILMS OF 1949.—*Story of Christopher Columbus* (Encyclopædia Britannica Films Inc.). (S. A. K.)

Explosions: *see* DISASTERS.

Export-Import Bank of Washington.

Created i 1934, the ban was made a permanent independent agency of the U.S. government by the Export-Import Bank Act of 1945, approved Jul 31, 1945.

Its purpose is not only to facilitate the financing of U.S exports, but to assist in the financing of development project in foreign countries which will increase their productive capacity step up their exports, thereby improving their foreign-exchang situation and making them better suppliers of those material and goods needed for import into the U.S. Its financing is generally limited to the dollar cost of U.S. materials, equipmen and services required for development projects in foreign countries.

The bank is empowered to lend to U.S. exporters and importers and to private entities in other countries as well as to foreig governments. It finances specific export and import transaction on application of U.S. exporters and importers where the natur of the risk involved is such that private credit cannot be obtained and when, in the opinion of its board of directors, ther exists reasonable assurance of repayment. It also arranges, i favour of foreign purchasers, credits which are available o equal terms to all qualified U.S. exporters for financing the sal of U.S. export staples such as raw cotton.

The total amount of loans authorized by the bank from th time of its establishment in 1934 approximated $4,513,000,00 at the end of 1949. Disbursements during 1949 were approximately $185,000,000, and repayments during 1949 were approximately $144,000,000. Outstanding loans of the bank totalle $2,179,585,273.52 at the end of 1949.

(S. SD.)

Exports: *see* AGRICULTURE; INTERNATIONAL TRADE; TARIFF *See* also under various countries.

Eye, Diseases of.

Sulfonamides continued to be employe in the treatment of local and systemi eye infections with few serious side reactions. That the use o sulfonamides could produce changes in the eye had been demonstrated by the production of slight cloudiness of the aqueo humour and transient myopia. Objective stigmatoscopy showe that in many cases refractive changes toward myopia occurre axially. Since the myopia must depend on a change in the len it seemed probable—as in diabetic changes of refraction—tha this is localized in the nucleus of the lens. The actual pathogenetic mechanism, however, remained obscure; probably th change is in some way allergic.

The increase in the number of diabetics continued, and the umber with diabetic retinopathy further increased in comparion with the greater number of diabetics. The increase in proiferative retinopathy was particularly pronounced. One-third of he patients with diabetic retinopathy had normal blood pressure that is, less than 130 mm. of mercury systolic). These were ound among the younger patients. More than one-fourth of he patients with retinopathy were affected by this before five ears had elapsed from the time when the diabetes started. Patients less than 50 years of age when their retinopathy was liagnosed had been affected with diabetes only for a short time; hey seemed to be particularly susceptible to retinopathy. The proliferative retinopathy takes longer to develop than the comnon retinopathy, probably because some pass through a nonproliferative preliminary state. Possible reasons for the increasng frequency of diabetic retinopathy are insufficient insulin reatment and the introduction in the 1930s of the free diet.

By the use of a new staining technique (fuchsin-sulphite regent of Fuelgen) which had become available for the visualizaion of the blood vessel walls in preparations of the whole unectioned retina, it was possible to see and determine the nature f small haemorrhagic spots in the retina seen particularly in liabetes by use of the ophthalmoscope. Flat preparations of the etina in cases of diabetic retinitis showed great numbers of apillary aneurysms. The aneurysms always have both an aferent and an efferent connection and are therefore true aneuysmal dilatations, not endothelialized petechiae which would be onnected to the vascular tree by a single channel. In some apillaries tiny knuckles can be seen in the walls, possibly repesenting the first stage of aneurysm formations. The aneurysms re most frequent in the central retinal region but occasionally an be found quite far out in the periphery. Similar capillary neurysms occasionally are seen in cases of retinal disease in ondiabetics, but they are quite rare. By the technique applied, ny cellular component that contains carbohydrate is stained ed. By this preparation the internal limiting membrane stains rilliantly, showing that this structure is a definite entity and ot a condensation of the vitreous surface, as had been supposed y some authors.

The use of tracer elements in the treatment of diseases of the ye had been proposed since the discovery by the use of radioutographs that the concentration of these elements can be estinated. A series of radioautographs were made in connection vith a comprehensive study of the exchange of phosphate beween the blood and the eye. Radioactive phosphorus (P^{32}) was njected intraperitoneally into guinea pigs. The animals were illed after an experimental period of one to one and one-half ours, whereafter the eyes were frozen and sectioned. The secions were placed in contact with photographic film which was larkened by the radioactive material. The pictures obtained in his manner gave a direct indication of the newly introduced hosphate in the eye at the moment of death.

Granulomatous diseases of the eye, such as brucellosis, syphiis and tuberculosis were treated with doses of manganese, coper, cobalt, zinc, magnesium and iodine with encouraging results.

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(W. L. BE.)

yskens, Gaston

(1905–), Belgian prime minister, was born at Lierre, Belg., on April 1. fter qualifying in political and social science at the University f Louvain, Belg., and Columbia university, New York city, he vas appointed in 1931 professor of economics and public inance at the former. He entered politics as a Christian Socialist and on April 2, 1939, was elected a member of the chamber of representatives; after the liberation he was re-elected on Feb. 17, 1946, and on June 26, 1949, his name was included in the Christian Social party list. He was appointed minister of finance in the first Achille van Acker cabinet (Feb. 1945), and in the two successive Paul-Henri Spaak cabinets (March 1947–Nov. 1948 and Nov. 1948–Aug. 9, 1949). On Aug. 10, 1949, he formed a coalition government of nine members of the Christian Social party and eight Liberals (*see* BELGIUM).

Facsimile: *see* RADIO; TELEGRAPHY.

Fads of 1949.

The outstanding fad of 1949 was the South American card game known as canasta. The New York Regency club, which was credited with having skyrocketed the game into popularity, reported that people who start playing the game in the afternoon never stop for dinner. Canasta may be described as a combination of rummy and bridge which can be played two- or three-handed but is essentially a four-handed partnership game.

During the year there was also the craze for get-rich-quick Pyramid clubs which had ephemeral popularity.

In fashions, the "new look" in women's dress underwent some modification. Skirts were shorter; the fullness, which was a characteristic of the previous year, was gathered toward the side or back in a harem drape, and the emphasis above the waist was on an extreme *décolletage,* which demanded the employment of boned brassières. This trend toward nakedness was also seen in the Bikini or French Riviera type bathing suit.

Fads in hair-do's showed a sudden and complete emphasis on short cuts. Not since the time of Irene Castle's innovation ("castle clip") had there been such a vogue for short, straight hair. Teen-agers affected rolled-up dungarees and flat, ballet-type slippers. Paired-off adolescents matched sweaters the way another generation swapped rings. Mothers and toddling daughters (mirroring the covers of popular women's magazines) showed matching playsuits and afternoon dresses. Except for a gay note in ties and sports jackets, men's fashions remained, as usual, conservative.

Television made a great impact on the popularity of children's toys. Miniature sets ranked high in the Christmas sales, as did marionettes, puppets and cowboy suits—all a reflection of the most popular TV shows.

The cowboy and Indians revival among children was perhaps the outstanding children's fad of the year. This could be attributed to the TV revival of the "Hopalong Cassidy" sequences and its adaptation of "The Lone Ranger."

Other toys which were sold out included costumes of all sorts, plastic erector sets, Toni permanent wave dolls and Schmoos. The latter was a well-publicized replica of a comic strip character.

In popular music "bop" continued to surge in faddish popularity. Described in *Downbeat* magazine by Charlie Parker as "It's trying to play clean and looking for the pretty notes" it found more favour than ever with small band jazz enthusiasts. Its distinctive feature is a strong feeling for the off-beat. Tin Pan Alley tunes of the year included: "Mule Train," "Ghost Riders in the Sky" and musical hits such as "Some Enchanted Evening" from *South Pacific.*

In literature it is interesting to notice that on the best seller lists once again spiritual themes found their way to the top. Cookbooks and picture books were also popular especially as Christmas gifts, and children's books once again were often half toy.

In food, fads were limited. Caesar salad was in vogue through the summer and fall, and slot-machine hot dogs still prevailed

PYRAMID CLUB "TAKING," at the height of the fad in 1949. A variation of the 1935 chain-letter fad, pyramid clubs held out the promise of get-rich-quick results on an original investment of one dollar

in the larger cities.

As usual the teen-agers were responsible for innovations in speech. "How ——————— can you get?" the blank denoting space for such words as "smart," "stupid," "low," "corny" or "frantic," was the catch phrase of 1949, and "wizard" was the adjective that took the 1948 place of "terrific." (M. F. K.)

Falk Foundation, The Maurice and Laura: *see* Societies and Associations.

Falkland Islands.

A British colony consisting of two main islands and about 200 smaller islands in the South Atlantic. Area: 4,618 sq.mi.; pop. (1948 est.): 2,000. Governor: Sir Miles Clifford.

History.—A new constitution, granted at the end of 1948, came into force on Jan. 1, 1949. It provided for a legislative council consisting of the governor as president (with a casting vote only), three ex officio, three official and six unofficial members, two of which were nominated and four elected. The council held its inaugural meeting on March 4. The Colonial Development corporation announced that under its auspices a sealing venture had been launched. The Falkland Islands Dependencies survey ship, "John Biscoe," returned to Britain on July 14 after a successful voyage, marred only by the inability to relieve the post at Marguerite bay; it again sailed for the antarctic on Oct. 11 and reached Deception Island on Dec. 2. (*See* also Antarctica; Exploration and Discovery.) (Jo. A. Hn.)

Finance and Trade.—The currency is the pound sterling. Estimated revenue, 1949: colony £127,555, dependencies £114,330; expenditure: colony £151,698, dependencies £103,567. Imports (1948): colony £293,212, dependencies £2,043,335; exports: colony £321,384, dependencies £3,900,203.

Family Income: *see* Census Data, U.S.

Famines: *see* Food Supply of the World.

Far Eastern Commission: *see* Japan; Reparations.

Farm Co-operatives: *see* Farm Credit Administration.

Farm Credit Administration.

The institutions and associations operating under the supervision of the Farm Credit administration in the United States and Puerto Rico continued to meet the sound credit needs of farmers and farmers' co-operatives in the year ended Dec. 31, 1949. The number of farmer borrowers increased over the previous year; the amount of money (capital stock owned) invested by farmers and farmers' co-operatives in their co-operative credit system was $11,729,113 more than at the end of 1948; and earned net worth increased substantially in the year.

The co-operative Farm Credit system operates through 12 district offices and through local co-operative credit associations. Farmers obtain credit to finance farm production (operating credit) from local production credit associations, and long-term farm mortgage credit through local national farm loan associations. Each farmer-borrower owns stock in his association equal to 5% of his loan. Farmers' business co-operatives deal directly with the bank for co-operatives of the district in which the co-operative is located or, in the case of a co-operative of large regional scope, with the Central Bank for Cooperatives. Each borrowing co-operative owns stock in the bank for co-operatives from which a loan is obtained.

Loans made to farmers and farmers' co-operatives by all institutions and associations of the Farm Credit administration in the year totalled $1,531,000,000, compared with $1,583,000,000 for the previous year. Credit needs of farmers reached a high level in the year, accelerated by farm commodity prices declining about 22% in the past two years while costs of farm production went down only 4%.

The 12 Federal land banks in 1949 closed 39,522 farm mortgage loans for $182,357,486 in the United States and Puerto Rico. At the end of the year they had outstanding 305,545 loans for $899,475,022. Funds used in making loans are obtained by the sale of consolidated farm loan bonds to investors. These bonds are not guaranteed by the United States government. Loans were made through national farm loan associations in the United States and direct by the Federal Land Bank of Baltimore in Puerto Rico. However, a change in the law in the year allowed farmers in Puerto Rico to form national farm loan associations. Also, the maximum size of loan was raised to $100,000.

The 503 production credit associations made 287,443 loans for $955,930,424 in the year, an increase of 3.4% over the previous year. The PCA's in the year increased their membership to 454,774, compared with 434,676 at the end of 1948.

Farmers' co-operatives—marketing, purchasing and business service associations—obtained $382,617,211 in operating capital, facility and commodity loans from the 13 banks for co-operatives in 1949, compared with $494,678,097 the previous year. The downward trend of farm commodity prices was reflected in the operations of farmers' marketing and purchasing co-operatives when they, like other handlers of agricultural products and supplies, were compelled to absorb some inventory and operating losses, and for the first time in many years found it necessary to adjust operations to buyers' market conditions.

The 12 federal intermediate credit banks, the principal sources of loan funds of the production credit associations and of part of the loan funds of the banks for co-operatives, as well as of certain types of privately financed credit institutions, made loans and discounts in the year totalling $1,589,000,000, compared with $1,546,000,000 in 1948. These funds were obtained principally through the sale of consolidated debentures to investors. These debentures are not guaranteed by the United States government.

Capital stock owned by farmers and farmers' co-operatives in Farm Credit institutions and associations went from $126,555,404 on Dec. 31, 1948, to $138,284,517 on Dec. 31, 1949, an increase of 9.3%. Capital stock of the 12 federal land banks totalled $57,885,528 on Dec. 31, 1949, compared with $55,917,766 the year previous, all of which was owned by farmer-borrowers either direct or through their national farm loan associations. Members of production credit associations owned $64,867,489 in capital stock of their associations, compared with $56,842,038 on Dec. 31, 1948. Government capital in the associations declined from $29,073,600 to $22,296,100 in the year. At the end of the year 116 associations were operating without government capital, compared with 52 on Dec. 31, 1948. Farmers' co-operatives increased their capital in the 13 banks for co-operatives from $13,795,600 on Dec. 31, 1948, to $15,531,500 on Dec. 31, 1949.

During the year, the Regional Agricultural Credit corporation of Washington, D.C., operating under the Farm Credit administration, was dissolved, and all functions relating to the corporation were transferred to the secretary of agriculture.

(I. W. D.)

Farm Debt: *see* AGRICULTURE.

Farmers Home Administration.

Expansion of services to farmers to include loans for farm houses and buildings was the major development of the Farmers Home administration in 1949. In the Housing act of 1949, approved July 15, the congress authorized this agency of the United States department of agriculture to make farm housing loans, at 4% interest, for periods up to 33 yr., to farm owners who need safe, sanitary homes and farm buildings but do not have resources to provide them and are not able to obtain necessary credit from other sources on reasonable terms. Small loans and grants for minor repairs to protect families' health and safety and loans for land enlargement and development also were authorized in special instances. Preference was given to war veterans and families of deceased servicemen.

Appropriations of $27,000,000 for farm housing loans and grants were approved Oct. 14 for the fiscal year ending June 30, 1950. The first loan was closed Nov. 17 in public ceremonies in Scottsboro, Ala., to enable a young farmer to build a modern six-room home on his 80-ac. farm. The house which had stood on the land for many years was far beyond repair and was torn down. Similar ceremonies were held during the remainder of the year to mark the closing of the first loans in various states.

Applications for other types of Farmers Home administration credit increased, particularly from veterans; there were about 20,000, or 32%, more applications filed by returned servicemen in the first ten months of 1949 than in the corresponding period of 1948.

Funds were available for approximately the same number of loans as in 1948, but the proportion of veterans' loans increased considerably. Through October, 108,489 operating loans and 1,417 direct farm-ownership loans were made, and 770 farmers and 21 farmers' associations in the 17 western states received credit for water facilities. About 45% of the $78,255,176 advanced in operating credit and 90% of the $11,772,958 loaned for farm purchase, enlargement and development went to veterans.

The mortgage insurance program, started late in 1947 to supplement the direct farm ownership loans, expanded rapidly. Banks, trust companies, insurance companies and private individuals advanced $9,438,085 in 1,339 farm real estate loans during the first ten months of 1949, and the Farmers Home administration guaranteed the repayments.

About 2,400 special loans to aid farmers who suffered losses from blizzards, floods, droughts or other production disasters were made in areas designated by the secretary of agriculture.

(D. B. L.)

Farm Income: *see* AGRICULTURE; INCOME AND PRODUCT, U.S.

Farm Machinery: *see* AGRICULTURE.

Farm Population: *see* AGRICULTURE; CENSUS DATA, U.S.

Farouk I

(1920–), king of Egypt, was born in Cairo on Feb. 11, the only son and eldest child of King Fuad I, and the great-great-grandson of Mohammed Ali, founder of the dynasty. In 1935, as Prince Said, he was sent to England to complete his studies. Upon his father's death on April 28, 1936, he returned to Egypt, where a regency council acted for him until July 29, 1937, when he was invested as king.

During the year 1949 rivalry of the palace and the Wafd party, led by Nahas Pasha, continued. On April 21, King Farouk received Husni ez-Zaim, the dictator of Syria. On Oct. 6 he solemnly exhorted the country to ensure the preservation and success of the coalition; but it was not long before party polemics destroyed the coalition cabinet (*see* EGYPT). Addressing the Arab league council on Oct. 30, he pointed out that there was still an empty seat at its table—that of Palestine. On Nov. 19, in connection with the celebrations of the centenary of the death of Mohammed Ali, the army presented to King Farouk a field marshal's baton.

Fashion and Dress.

With the 1949 spring openings it became evident that the silhouette was about to take a new and surprising turn toward the straight line reminiscent of the 1920s. The first indication was the shorter, tighter day-skirt, 14 in. above the floor and going up. The second manifestation was the appearance of a day-length evening dress, which, as the year went on, evolved into that most characteristic fashion of the 1920s—the chemise dress, straight as a string, beaded, embroidered or fringed, and either strapless or with narrow shoulder straps. There was much else on which to base the reminiscent trend: oval necklines, helmet hats, tight little *tailleurs,* crepe de Chine shirtwaist dresses, loosely fastened belts, dangle earrings, long ropes of pearls, paste hair-ornaments and tiaras for evening, and boyish windswept coiffures that strongly recalled the flapper era.

Since it was likely that the majority of women would hesitate over an immediate and complete acceptance of this revolutionary change in fashion, designers introduced many devices for making the transition easier. In Paris, for instance, the tight skirts in the spring collections were embellished with "flying panels," lengths of matching or contrasting fabric floating from the beltline to give a softer, less rigid silhouette. In the fall these were crisscrossed like shears and called "scissors panels." Other devices for softening the new straight lines were hip bows, flaring panniers, fans of pleats in back or front or at one side, tunic effects and bloused backs. The overblouse, in fact, became one of the year's biggest fashions and was seen everywhere over straight skirts and even over shorts on the beach. These overblouses were either long and fitted below the belt, or waist-length and tied with a drawstring or elastic-banded. Another important 1949 fashion point was the dropped shoulderline, which tended to shift emphasis to sleeves. Dropped shoulders and voluminous sleeves appeared on many suits, dresses and coats.

In 1949 style came to depend as much on fabric as on cut. For daytime, flat fabrics disappeared almost entirely. The most popular coatings were dobby woollens, thick fleeces, chinchilla cloth and tweeds. The devaluation of the British pound made excellent English tweeds available even in the less expensive brackets. Ottomans (ribbed silks and wools) were extremely popular. Piqué had its biggest summer, with damask-printed cottons, ribbed organdies and Swiss muslins also in abundance. For resort wear, rough, coarse linens were the fashion, particularly in black.

The use of nylon increased tremendously. Nylon underwear was in demand everywhere, and by midyear, there was a flood of dress fabrics that looked like crepe, seersucker, moire and worsted, all made of nylon yarn, all washable and quick-drying with no ironing necessary. The U.S. nylon bathing suit, usually strapless to allow an even suntan, was seen on all the fashionable beaches of the world. For evening wear, although velvet made a strong comeback and there was more chiffon than there had been in years, the textured fabric began to make itself felt in little ways. One of the most-talked-about dresses in the winter collections was a short, sleeveless dinner dress of a new, primitive, porous wool, rough as a shepherd's cloak. And, day and night, there was great emphasis on texture in accessories, with pigskin, fur, *glacé* kid, alligator and pin seal much used for bags, belts, shoes and gloves.

The short-hair fashion, which had been on the upgrade since the end of World War II, was completely accepted in 1949, and the hats of the year, therefore, were small and caplike; they included berets, pillboxes, bicornes and toques, with some models, such as close-fitting helmets and turbans, borrowed from the 1920s. One of the most popular hats of the year was the jockey cap, seen in all fabrics from felt to velvet, and worn jauntily to one side, with the brim over the ear. Dinner caps appeared at all the smart restaurants and clubs—little cups and eggshells of satin and velvet, often ornamented with jewelled dangles or feather upshoots.

Finally, an extremely significant change had taken place in the distribution of fashion. Paris designers, notably Dior, Fath and Schiaparelli, began to commute between New York and Paris. In Paris their collections were strictly made-to-order and extravagantly high-priced. In New York they designed for mass production at prices that made their models available to large numbers of American women. It looked, at year's end, as if a new and much more democratic era was dawning in the world of fashion and dress. (*See* also FURS.) (C. SN.)

FBI: *see* FEDERAL BUREAU OF INVESTIGATION.

Federal Bureau of Investigation.

Established in 1908 by Attorney General Charles J. Bonaparte, the FBI is the investigative arm of the United States department of justice. The jurisdiction of the Federal Bureau of Investigation extends generally to all federal crimes not specifically assigned to another agency of the federal government. Specifically, it is charged with the duty of investigating violations of the laws of the United States, collecting evidence in cases in which the United States is or may be a party in interest, and performing other duties imposed upon it by law. It is also a service agency aiding law enforcement in identification, technical, training and record matters.

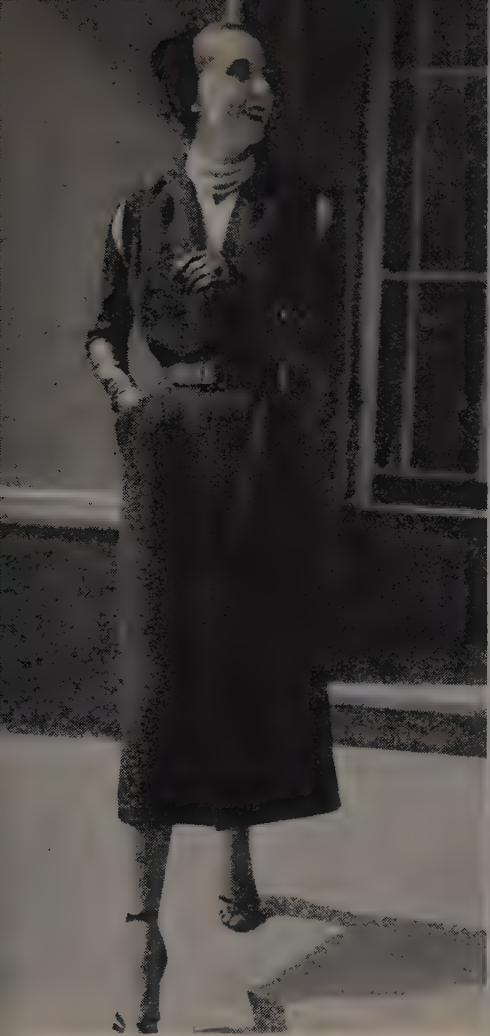
Originally, FBI jurisdiction covered about 20 or 30 federal statutes. Changing conditions necessitated more federal laws to control various forms of illicit interstate traffic and other varieties of large-scale criminal activity, and FBI jurisdiction expanded until in 1949 it embraced approximately 120 major federal laws.

As a result of the FBI's general investigative activity during the 1949 fiscal year, returns to the taxpayers totalling $100,477,335 were effected—in fines, savings, recoveries and Renegotiation act claims adjusted in favour of the government. This figure exceeded by more than $51,000,000 the entire cost of all FBI operations during the year.

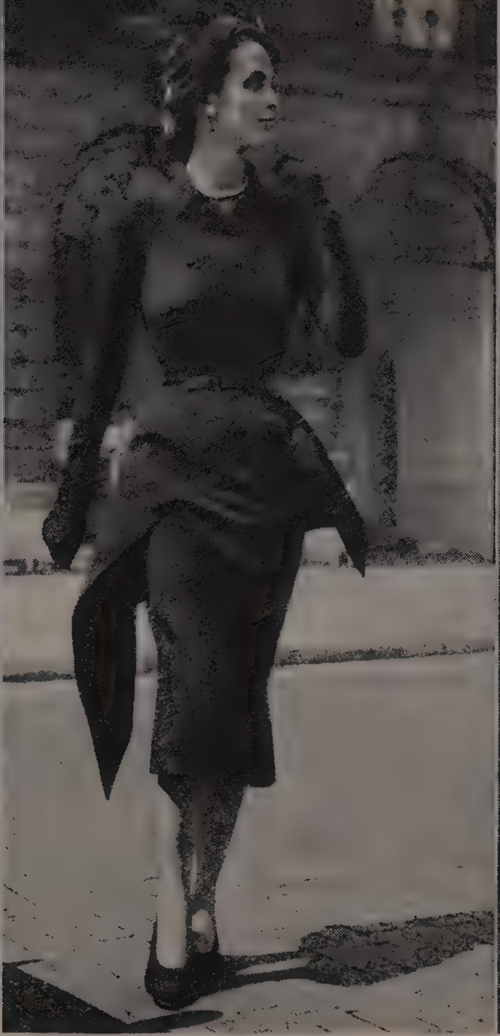
During the 1949 fiscal year there were 8,415 convictions in cases investigated by the FBI with sentences totalling 20,077 years, 10 months and 13 days. In addition, there were two death and eight life sentences. There were 5,812 fugitives located and 10,005 automobiles recovered in all cases investigated. Of all persons brought to court in FBI cases, 97.2% were convicted, 93.9% of the convictions being on pleas of guilty.

Since the outbreak of World War II in 1939, the FBI has had the primary responsibility for collecting information relating to the general security of the nation. During the 1949 fiscal year the FBI handled a large volume of work in collecting and disseminating to other government agencies security information of official interest to them.

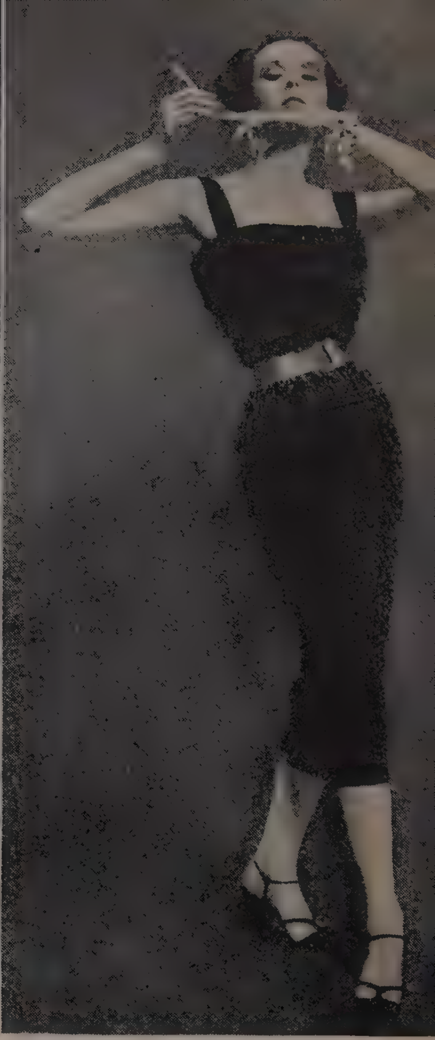
During the 1949 fiscal year in connection with the federal employees loyalty program, a total of 550,087 loyalty forms of incumbents, appointees and applicants were processed. Since the inception of the loyalty program on Aug. 1, 1947, a total of



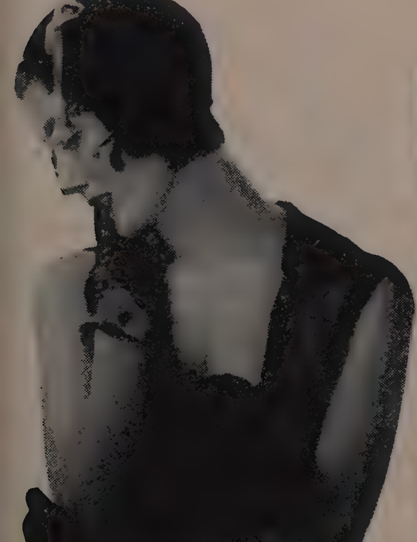
bove: DAY-LENGTH DINNER DRESS of rough, heavy lack wool, reflecting emphasis on textured fabrics



Above: THE DIPPING, JAGGED PANELS, a Parisian fashion note designed to relieve the straighter skirts worn in 1949

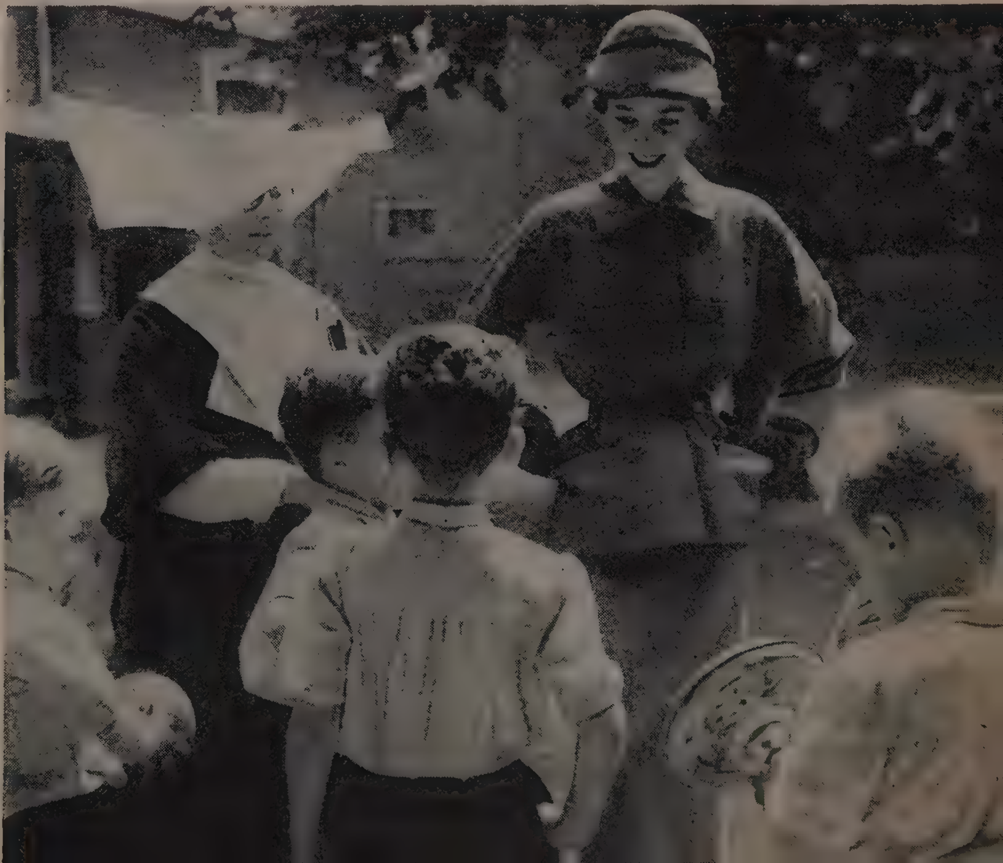


Above: BEADED CHEMISE EVENING DRESS, one of many 1949 fashions reminiscent of the twenties



bove: DINNER CAP in the fashion of 1949, hen the trend was toward small caplike hats orn over neat, shingled heads

Below: THE FASHIONABLE 1949 SUIT, with overblouse, dropped shoulders and important sleeves



2,571,062 loyalty forms had been processed, 9,728 full field investigations had been initiated, and 9,104 of these investigations had been closed. As of June 30, 1949, there were 624 full field investigations pending and the FBI had returned to the U.S. civil service commission 2,561,046 applicant, incumbent and appointee forms marked "No Disloyal Data." This represented 99.6% of the total forms processed by the FBI. In this program, as in all its other investigations, the FBI was strictly a fact-finding organization. The facts collected were reported without bias, conclusions or recommendations. It was the responsibility of the employing agencies and the loyalty hearing boards to weigh the facts and to take or decline administrative action.

The identification division of the FBI received 3,508,480 fingerprint cards during the 1949 fiscal year, bringing the total number on file to 112,024,618. More than 73% of all arrest fingerprint cards received were identified, and 12,780 fugitives from justice were identified by fingerprint searches. There were 12,138 agencies contributing to this national repository of fingerprint records in 1949, and 79 foreign countries and territories were co-operating with the FBI in the international exchange of fingerprints.

The FBI laboratory received 88,435 specimens of evidence for examination, 70,503 of them in connection with FBI work, 2,241 of them from other federal agencies and 15,691 from non-federal agencies. These specimens required 102,327 scientific examinations of various types, the submission of written reports, testimony in 217 cases and depositions in lieu of testimony in 1 case.

Three sessions of the FBI National academy for local law-enforcement officers were completed during the 1949 fiscal year, bringing the number of graduates from this academy to 2,024, representing departments in every state in the union, all territorial possessions and many foreign countries.

Police training of the type offered in the National academy was made available to an estimated 75,500 officers attending 1,510 local police training schools in which the FBI participated during the year. (*See* also CRIME; JUVENILE DELINQUENCY; POLICE; SECRET SERVICE, U.S.) (J. E. H.)

Federal Communications Commission.

Technical improvements and policy decisions accomplished marked advances both domestically and internationally in practically all forms of electrical communication during 1949.

Standard broadcast stations mounted from 2,127 to 2,234 on the air or under construction, with 352 applications pending. Frequency modulation stations in operation increased from 700 to 740 with 48 applications pending. One hundred and eighty-eight FM construction permits and five FM licences were surrendered.

Issuance of new television construction permits remained suspended throughout the year pending a comprehensive study by the commission. Construction previously authorized went forward, however, and at the end of the year the number of stations on the air had advanced from 51 to 98, with 10 under construction. There were 350 applications pending.

In September the commission began a hearing on the possibilities of improving the existing very high frequency television system, of allocating additional channels in the ultra high frequency band and of authorizing colour. Colour systems were demonstrated by the Columbia Broadcasting system and the Radio Corporation of America. Color Television, Inc., was scheduled to give a demonstration in 1950.

The commission rescinded its ban against editorializing by broadcast licencees with the proviso that their stations continue to give a reasonably balanced presentation of all responsible viewpoints on particular issues.

Many of the numerous radio giveaway programs would be outlawed under an interpretation by the commission of a section of the criminal code on lotteries. The commission listed several types of programs which it considered violations of the statute and announced that it would not grant licences to applicants who broadcasted or proposed to broadcast such material. Enforcement of these new rules was being delayed pending the outcome of several suits seeking to enjoin the commission.

A series of decisions in the court of appeals for the District of Columbia circuit upheld the authority of the commission to review program plans and past performance in determining if an applicant had served the public interest.

A conference of the North American Regional Broadcasting Agreement signatories, which convened in Montreal, Que., in September to discuss a new agreement, recessed until the spring of 1950 without reaching an agreement. Vital problems of sharing frequencies were thus unsolved as the year ended, with grave danger of serious interference to radio service in all the countries if early agreement was not reached.

The use of radio on land mobile vehicles of various types was greatly expanded by the promulgation of new rules. While the demand for frequencies far exceeded the supply, it was nevertheless possible to provide for a number of new uses of radio, as well as expansion of existing services. This was made possible through further advances in equipment design and through the utilization of frequencies in the higher portion of the radio spectrum.

The new rules made specific provision for the licensing, on a regular basis, of such groups as the land transportation, petroleum, power, logging and construction industries, as well as of a number of others. In addition to providing facilities for these privately operated radio systems, frequencies were also allocated for use by communications common carriers serving the general public.

Western Union proposed to congress that it serve as the nation's single system of domestic and international record communications by acquiring the telegraph business of telephone companies and the international telegraph facilities of U.S. carriers and by establishing a domestic communications system for governmental use, both civilian and defense.

A marked improvement in global communications was anticipated as the result of the International Telegraph and Telephone conference at Paris. The resulting agreement reflected a high degree of success in modernizing rules governing operating practices and in revising the rate structure. About 70 nations participated. (*See* also RADIO; TELEVISION.) (W. CY.)

Federal Deposit Insurance Corporation.

The calendar year 1949 was the fifth consecutive year in which no depositor in an insured bank in the United States experienced a loss as a result of banking difficulties. During the year four banks with total deposits of nearly $6,000,000 received advances from the Federal Deposit Insurance corporation which facilitated the merger of each bank with a solvent insured bank. Depositors in these banks were fully protected against loss.

At the close of 1949 the surplus of the Federal Deposit Insurance corporation amounted to about $1,200,000,000, which had been accumulated from assessments paid by insured banks and from the return on the investments of the corporation. All the original capital stock had been repaid prior to 1949.

The contingent liabilities of the corporation as an insurer of bank deposits increased slightly during the year 1949 with the increase of total deposits in the 13,600 insured banks. An inrease during the last half of the year more than compensated or a decline of $5,000,000,000 during the first half.

The board of directors of the Federal Deposit Insurance corporation was composed of Maple T. Harl, chairman, Preston Delano, comptroller of the currency, and H. E. Cook. (*See* also BANKING.) (M. T. H.)

Federal Housing Administration: *see* HOUSING.
Federal Income Tax: *see* TAXATION.
Federal Land Banks: *see* FARM CREDIT ADMINISTRATION.

Federal Mediation and Conciliation Service.

The Federal Mediation and Conciliation service was created as n independent agency by the Labor Management Relations act f 1947. The function of the service is to prevent or minimize abour disputes which affect the free flow of commerce by assisting the parties to settle their disputes through conciliation and nediation. As a service to both labour and management, lists f arbitrators are provided from among whom one may be elected by the parties to render a final and binding decision in abour disputes.

During 1949 the service was called upon to assist in the settlement of several major labour disputes, including those affecting he coal, steel and aluminum industries. One of the most significant developments in the steel dispute was the appointment by the president of a steel fact-finding board with the power to ecommend to the parties a basis upon which the dispute might e settled. The board's major recommendation was that the teel companies place into effect a noncontributory pension und. It also recommended that no wage increase take place. While the unions were willing to accept the board's recommendations, the employers were not, and despite the efforts of he service to prevent a work stoppage from taking place a trike of 500,000 steelworkers did occur.

During 1949 the service employed approximately 200 commissioners. In the 12 months preceding June 30, 1949, the service eceived 20,841 dispute notices concerning disputes over contract negotiations involving 82,162 establishments. In addition, ,937 direct requests from either one or both parties were eceived inviting intercession of the service. The service accepted jurisdiction in 15,047 disputes and actively participated n the settlement of 7,046. In the remaining 8,001 disputes the ervice stood by ready to intercede, but the disputes were settled by the parties themselves without active participation of he service.

A preventive activities program was also being carried on by he service, the purpose of which was to improve the normal elations between the parties during the life of a contract so hat issues arising after contract expiration might be treated as nutual problems rather than as issues in dispute. It was the aim f the service to establish peaceful negotiation of contracts hrough effective collective bargaining by the parties themselves. (C. S. C.)

Federal Power Commission.

Power production in the United States reached an ll-time high in 1949. Electric utilities in the 12 months ended Nov. 30, 1949, produced for public use 290,427,498,000 kw.hr. f electric energy, the Federal Power commission reported, indicating a production of more than 291,000,000,000 kw.hr. in he calendar year. Industrial output was about 53,000,000,000 w.hr.; so that the total produced by utility and industrial lants was estimated at 344,000,000,000 kw.hr. Installed generating capacity of public utilities at the end of November was 1,575,110 kw., and capacity of industrial plants, including railroads and railways, was 13,418,242 kw. Adding the 485,000 kw. additions expected in December, the year's total increase in generating capacity was estimated at 5,500,000 kw. Five million farms had been electrified, statisticians reported, and the utilities added 2,000,000 customers to their lines, making a total of nearly 43,000,000. Applications for preliminary permits, licences and amendments filed with the commission in the fiscal year involved, after deducting for conflicting applications, ultimate installations of nearly 2,850,000 h.p., more than double the 1,300,000 h.p. total of the previous year. The 178 applications pending involved ultimate new installation of 5,200,000 h.p., approximately 87% of the 5,922,000 h.p. installed capacity of the hydroelectric projects which were already under licence.

Determination of the actual original cost of electric utilities, a task upon which the commission had been engaged for almost a decade, was nearing completion. To June 30, 1949, dispositions of excess over original cost aggregating $1,448,899,283.74, by 251 public utility companies had been authorized, and attention was being concentrated on investigations of the plant accounts of natural gas companies under the commission's jurisdiction.

River-basin studies in co-operation with the army corps of engineers and the bureau of reclamation involving the feasibility of hydroelectric installations resulted in specific reports on projects having a potential capacity of about 4,800,000 k.w. capable of generating annually about 29,000,000,000 kw.hr. Three Missouri river basin power-market surveys were published; a five-state New England survey was completed; a state survey of Nevada was made, as well as a report on power markets and developments in the Pacific northwest; and ten other surveys were in progress.

Natural gas became one of the nation's fastest growing industries, work being rushed on new pipe lines to almost all parts of the country. Transcontinental Gas laid 600 mi. of its 1,180-mi. pipe line to supply the New York city-New Jersey area. Tennessee Gas Transmission was extending its system to Buffalo, N.Y., increasing capacity to 1,000,000,000 cu.ft. per day. Texas Eastern, owner of the "Big Inch" lines, projected new lines that would raise its capacity to more than 1,000,000,000 cu.ft. All three systems were planning extensions to serve New England cities. The gas supply of Detroit, Mich., was substantially increased and service extended to Milwaukee, Wis.; Minneapolis and St. Paul, Minn., were supplied by new lines from the Hugoton field. St. Louis was enabled to change to natural gas, and a new line was completed to Kansas City, Mo. Baltimore, Md., received natural gas and Washington, D.C., supply was increased by lines from West Virginia. Southern California received vast quantities of Texas and New Mexico gas, and new lines by El Paso Natural Gas Co. and Pacific Gas and Electric were under construction to supply the San Francisco bay area. Construction was proceeding on lines to serve Nashville, Chattanooga, Knoxville and other Tennessee points. Two companies were competing to supply Virginia cities, one proposing also to serve North and South Carolina. Southern companies proposed large extensions in Mississippi, Alabama, Georgia and Florida. A new Texas-Illinois pipe line was projected to increase Chicago's gas supply. Construction of the new Trunkline Gas Supply line would largely increase Panhandle Eastern Pipe Line Co.'s capacity. Texas Gas Transmission had almost completed its line from Carthage, Tex., to Middletown, O. Cities Service, Colorado Interstate, Columbia, Consolidated and other systems built new lines. United Gas Pipe Line Co., operating in Texas, Louisiana and Mississippi, was reported as having a capacity of 2,000,000,000 cu.ft. per day. Since 1942 the Federal Power commission had issued 446 certificates of public convenience and necessity authorizing the construction of 27,500 mi. of pipe lines and 1,603,000 compressor horsepower with an estimated cost of $1,628,500,000. Applications for certificates pending on June 30, 1949, involved proposed additional expenditures of $922,807,000.

After serving ten years, a large part of the time as chairman, Leland Olds of New York retired from the commission, the senate having refused to confirm his nomination for a third five-year term. He was succeeded by Mon C. Wallgren. Nelson Lee Smith of New Hampshire continued as chairman, and the other members of the commission were Claude L. Draper of Wyoming, who had served since the commission was reorganized in 1930, Harrington Wimberly of Oklahoma and Thomas C. Buchanan of Pennsylvania. (J. W. Je.)

Federal Reserve System.

In view of the changing credit situation and the downward readjustment in business, the federal reserve system took steps during 1949 to relax measures of monetary and credit restraint adopted earlier to combat inflation.

During the year, federal reserve holdings of government securities declined $4,400,000,000, of which $3,800,000,000 took the form of a reduction in holdings of marketable bonds. The federal reserve banks sold long-term restricted issues to savings banks and private pension and trust funds. The liquidity position of commercial banks was increased through their acquisition of substantial amounts of short-term government securities with funds released by reductions in reserve requirements.

On June 28, the federal open market committee, after consultation with the treasury, announced that "it will be the policy of the Committee to direct purchases, sales, and exchanges of Government securities by the Federal Reserve banks with primary regard to the general business and credit situation." While it was stated that "the policy of maintaining orderly conditions in the Government security market, and the confidence of investors in Government bonds will be continued," it was noted that "under present conditions the maintenance of a relatively fixed pattern of rates has the undesirable effect of absorbing reserves from the market at a time when the availability of credit should be increased." Later, on Dec. 3, in testimony before the Douglas subcommittee of the joint congressional committee on the economic report, the chairman of the board of governors of the federal reserve system stated that he regarded the announcement "as a significant milestone because it reflected the joint judgment of the Treasury and of the Federal Open Market Committee that the postwar economic and financial situation had evolved to a point where open-market operations could safely be permitted to play a more orthodox role in our policies," and noted his regard for "June 28, 1949, as a most important date" because "it signified removal of the strait-jacket in which monetary policy had been operating for nearly a decade; that is, since the beginning of the war."

Reserve requirements for member banks were reduced substantially during 1949. At the beginning of the year, reserve requirements against net demand deposits were 26% for central reserve city member banks, 22% for reserve city member banks and 16% for country member banks, while reserve requirements against time deposits at all member banks were 7½%. At the end of the year, reserve requirements in effect were 22% against net demand deposits for central reserve city member banks, 18% for reserve city member banks and 12% for country member banks, with a reserve requirement of 5% against time deposits at all member banks.

These reductions were brought about in three steps. On April 28, the board of governors lowered reserve requirements effective early in May; on June 30, the temporary authority granted by congress for increased reserve requirements expired, and reserve requirements were further reduced; and again, on Aug. 5, the board of governors announced another reduction in reserve requirements effective in steps during August and early September. The reductions in reserve requirements during the year caused required reserves of all member banks in Jan. 1950 to be $4,000,000,000 less than what they would have been on the basis of requirements in effect in Jan. 1949.

Regulation W, relating to consumer instalment credit, was twice eased by the board of governors in the first part of 1949. Effective March 7, the standard maximum maturity on all extensions of consumer instalment credit was made uniformly 21 months instead of 15–18 months, and minimum down payments on furniture, appliances, etc., were reduced from 20% to 15%. Effective April 27, the maximum maturity on consumer instalment credit was further increased to 24 months, and the minimum down-payment requirement on furniture, appliances, etc., was further reduced to 10%. In both revisions the 33⅓% minimum down payment on automobiles was retained. On June 30, the temporary authority granted by congress, under which the board of governors issued Regulation W, expired, and the regulation was not continued after that date.

Effective March 30, the board of governors amended the supplements to Regulations T and U so as to reduce the margin requirements for purchasing registered securities from 75% to 50%. These requirements were applicable both to purchases of securities and to short sales. Other amendments to Regulations T and U, effective May 16 and July 20, increased the loan value for securities acquired through the exercise of subscription rights and removed margin requirements applicable to credit for financing the functions of specialists on the New York Stock exchange. (*See* also BANKING; CONSUMER CREDIT.) (J. K. L.)

Federal Security Agency.

June 30, 1949, marked the completion of the first ten years of the Federal Security agency's operation. Though most of its constituent units were older than the agency, their activities had in general their greatest expansion and development in this period. The major constituents include the office of education, public health service, Social Security administration, office of vocational rehabilitation (q.v.) and Food and Drug administration. Integration of agency operations at the regional level is achieved through ten Federal Security regional offices.

On Aug. 20, 1949, the bureau of employment security, part of the Social Security administration, was transferred to the department of labour by the President's Reorganization plan no. 2 of 1949.

As in the past few years, one of the major concerns of the office of education during the year was the teacher shortage, still critical for elementary schools, and the serious shortage of adequate school buildings to house a record-breaking school population.

Federal grants to states for general public health work, tuberculosis, venereal diseases, cancer and mental health are administered by the public health service. These grants, totalling $36,400,000 in the fiscal year, were the largest in history, as were the amounts appropriated by states and localities for these purposes. In the hospital construction program, all states and territories had completed their surveys and plans by the end of the fiscal year, and almost 800 projects had been approved for grants. Grants actually made totalled $10,800,000. In July 1949 the Hospital Survey and Construction act was amended to increase to $150,000,000 the annual federal amount authorized (through June 1955) to assist states and communities in construction of hospitals and health centres. The amendments also established in the public health service a program of research and demonstrations on hospital administration.

In addition to long-term research projects carried on by the ational Institutes of Health, approximately $2,000,000 in rants and contract authorizations was allocated to seven in- itutions for the construction of additional research facilities cancer and in cardiovascular, mental and nervous diseases. he service's research fellowship program also made advanced esearch training available to 430 scientists.

The social security programs for which the Social Security dministration has federal responsibility continued to afford rotection to insured wage earners and their families against e risks of income loss through old age, involuntary unemploy- ent or death of the family earner. At the end of the fiscal year 949, monthly benefits totalling $51,500,000 were being paid nder the old-age and survivors insurance program to more than ,500,000 persons—retired workers and their wives and de- endent survivors of deceased insured workers. During the fiscal ear the state-federal unemployment insurance system paid out 1,193,000,000 to about 5,600,000 unemployed workers who ualified on the basis of their previous employment and for hom suitable jobs could not be found. For certain needy groups f the population, also, the special state-federal public assistance rograms helped maintain family income. In June 1949, pay- ents were made to about 2,600,000 recipients of old-age as- istance, 71,200 recipients of aid to the blind and nearly 1,370,- 00 children in 540,000 families receiving aid to dependent chil- ren. In the maternal and child-health and child-welfare pro- rams, federal grants totalling $22,000,000 were made to states o assist them and local communities to extend and strengthen heir health and welfare services for mothers and children.

The state-federal programs of vocational rehabilitation for ivilians, for which the office of vocational rehabilitation admin- sters federal grants and provides technical assistance to the tates, served a record number of disabled persons. During the scal year 1949, 58,000 were rehabilitated into self-sustaining mployment. Another 11,250 were awaiting only a final decision hat they and their employers were mutually satisfied. A third roup of 11,000 were prepared to enter gainful employment.

The Food and Drug administration examined about 70,000 samples of foods, drugs and cosmetics in the fiscal year to check observance of the federal statute by the more than 77,000 firms doing interstate business in these commodities. Nearly 2,200 seizure, criminal and injunction actions were instituted in the federal courts for violation of domestic shipments, and about 6,400 imported products that failed to meet U.S. standards were detained at ports of entry. (*See* also DRUG ADMINISTRATION, U.S.; PUBLIC HEALTH SERVICES; SOCIAL SECURITY; VOCATIONAL REHABILITATION, OFFICE OF.) (O. R. E.)

Federal Trade Commission. The Federal Trade commission administers a group of laws designed to foster the successful operation of the economic system of free competitive enterprise in the United States. Some are designed to prevent buyers from receiving false or misleading information; others are designed to keep channels of trade open and ensure the widest possible choice for buyers and sellers, at prices arrived at freely and offered without illegal discrimination. All are grounded on the economic principle that the well-being of the country and of its individual citizens depends upon free and fair competition in an open market.

Under the Federal Trade Commission act, the commission takes steps to prevent use of deceptive and unfair methods of competition. Under the Clayton act, it takes action to prevent substantial lessening of competition through unlawful price or related discrimination, exclusive dealing contracts, acquisition of corporate stocks, or interlocking directorates. Under the Webb-Pomerene Export Trade act, it supervises the registration and operation of associations of U.S. exporters. Under the Wool Products Labeling act, it takes steps to protect producers, manufacturers, distributors and consumers from the unrevealed presence of substitutes and mixtures in manufactured wool products. Under the Lanham Trade-Mark act, it has power to apply for cancellation of registered trade-marks which are deceptive, immoral or scandalous, or have been obtained by fraud or are contrary to other provisions of the act.

In administering these laws, the commission carries on its

EMONSTRATION UNIT of the U.S. public health service at work in 1949, howing elementary school pupils of Hartsville, S.C., how to use sodium fluoride their daily dental care activities through formal complaint and trial methods and through voluntary co-operative procedures, including individual stipulation agreements, industry-wide trade practice conferences and other types of co-operation with businessmen to inform and guide them concerning the scope and meaning of the laws. It also carries on general investigations of economic conditions.

During the year ending June 30, 1949, the commission issued 96 formal complaints and 47 orders to cease and desist from unlawful practices. It accepted 139 voluntary stipulations to discontinue unlawful practices and promulgated trade practice rules for the following industries: handkerchief; yeast; oil heating (New England); trade pamphlet binding (New York); and rayon, nylon and silk-converting. Existing rules for the cotton-converting industry and the baby-chick industry were revised and extended. Conferences concerning proposed rules were held for 14 other industries. The commission also completed an investigation and made recommendations for the future conduct of the business of the Pipe-Fittings & Valve Export association in accordance with the Webb-Pomerene Export Trade act. It also carried on investigations of Carbon Black Export, Inc., and Pacific Forest Industries under the same act. Forty-five export associations were registered with the commission on June 30, 1949. The commission carried on compliance work, under the Wool Products Labeling act, with thousands of manufacturers, distributors and dealers and made field inspections in 39 states. It also used its powers under the Lanham Trade-Mark act, which became effective July 5, 1947, to file two petitions for the cancellation of trade-marks with the commissioner of patents. The Federal Trade Commission act and the Clayton act became applicable to the interstate insurance business on July 1, 1948, insofar as the business is not regulated by state law. The commission, therefore, continued to study state insurance legislation, held trade practice conferences in the mail order insurance field and carried on other investigations of insurance matters.

During the year ending June 30, 1949, the commission completed a report on "The Concentration of Productive Facilities" and on "The Fertilizer Industry." It issued quarterly financial reports based on the operating statements of about 8,500 manufacturing corporations, presented data on concentration in manufacturing industries before the subcommittee of the house judiciary committee and made exploratory economic investigations as a basis for developing a program for antimonopoly cases.

In recent years, the commission has placed increased emphasis on industry-wide elimination of unlawful trade practices. It has, therefore, expanded the voluntary and co-operative phases of its work to expedite widespread understanding and observance of the law. Under its trade practice conference procedures, for example, it is possible to work toward voluntary elimination of unlawful trade practices on an industry rather than an individual company basis. Such a program permits the commission to use its powers under the laws it administers most effectively to prevent practices leading toward monopoly and to promote practices resulting in fair competition. (L. B. Mn.)

Federal Works Agency: *see* General Services Administration.

Federated Malay States: *see* Malaya (Federation of) and Singapore.

Fencing. The number of entries in the 1949 national championships was the largest in the history of fencing in the United States. A new system of deciding the individual championships was tried. This consisted of fencing the usual pool system until there were eight survivors. The eight survivors were then matched in ten touch bouts for men and eight touch bouts for women, with a winning margin of two touches required in direct elimination. This was a slight modification of the new system tried out in the international championships held in 1949 in Cairo, Egypt.

In the team events, the Fencers club of New York won the foil team championship for the first time since 1936 with the Salle Santelli of New York second and the New York Athletic club third. The Salle Santelli retained its three team titles, sabre, épée and three-weapon. In the sabre the Washington, D.C., Fencers club was second with Salle Montague of New York third. In the épée team event Salle Montague was second and the University of Chicago third. In the three-weapon team the New York Athletic club was second and the Fencers club of New York third. The Faulkner School of Fencing of Los Angeles, Calif., successfully defended its women's team titles.

The women's individual championship was won by Miss Polly Craus of the Faulkner School of Fencing who defeated Mrs. Maxine Mitchell of the Cavaliers of Pasadena, Calif., in an overtime bout 9-7. Mrs. Dolly Funke of the Fencers club defeated Miss Grace Acel of the Salle Santelli 9-5 for third place.

In the épée individual, defending champion Norman Lewis of the Salle Santelli defeated John Donaldson, U.S. army, 10-3 for the title. F. R. Weber, U.S. army, defeated George B. Calkins of the Philadelphia, Pa., division 10-7 for third place.

The men's foil individual went to Daniel Bukantz of the Fencers club who defeated his clubmate Charles Steinhardt 10-8. Silvio Giolito of the New York Athletic club defeated the defending champion Nathaniel Lubell of the Fencers club 11-9 for third.

For the first time in history a foreign visitor to the U.S. won the national fencing championship when Umberto Martino, Italian military attaché to the embassy in Washington, defeated George Worth of the Salle Santelli 10-8 for the sabre championship.

In the Pacific coast championships, Alfred Snyder of the Olympic club of San Francisco, Calif., won the men's foil. Gary Martin of the Aldo Nadi studio of Los Angeles was second and Salvatore Giambra of the Olympic club was third. Bruce McBirney of the Faulkner School of Fencing won the épée with Pierre Paret of the Halberstadt School of Fencing of San Francisco second and Del Reynolds of the Los Angeles Athletic club third. The sabre was won by Salvatore Giambra of the Olympic club.

The women's championship went to Miss Polly Craus of the Faulkner School of Fencing with Mrs. Maxine Mitchell and Miss Camille Bayer, both of the Cavaliers, second and third respectively. The Olympic club took the foil and sabre team titles and the Faulkner School of Fencing won the épée and women's team events.

In the midwest championships, all of the 1948 winners repeated. Byron Krieger of the Salle de Tuscan of Detroit, Mich., in foil and sabre, Miss Paula Sweeney of the same club in the women's foil and Albert Wolfe of Kentucky in the épée. Arthur Cohen of the Illinois division was second in foil with Edgar Micllef of Michigan third. Scott Breckinridge of Kentucky was second in épée and Lional Bernstein of Illinois was third in both épée and sabre. John Westley of Illinois was second in sabre. Mrs. June Krieger, wife of the foil and sabre champion, was runner-up in the women's event and Miss Carol Christensen of Michigan third. (W. A. Dw.)

Fertilizers. Nitrogen, phosphoric acid (P_2O_5) and potash (K_2O) are the three primary plant nutrients and they usually constitute the statistical factors used to record commercial fertilizer data. In the year ended June 30, 1949 world consumption of commercial fertilizers and fertilizer ma erials (exclusive of U.S.S.R.) included 3,292,000 tons of nitro-en, 4,966,000 tons of phosphoric acid and 3,220,000 tons of otash, increases respectively of 44%, 42% and 37% above e prewar average. During that year Europe continued as a et exporter continent to the extent of 166,000 tons of the ombined nutrients; South America remained a net exporter of 05,000 tons, while North America changed to a net exporter f 279,000 tons. Africa was a net importer of 165,000 tons, sia of 445,000 tons and Oceania of 11,000 tons. The change f North America from an importing to an exporting continent as caused by the shipment of large quantities of fertilizer rom Canada and the United States to occupied areas in Ger-any, Japan and Korea. Large shipments of fertilizers were lso made to China.

In 1948 there was estimated to be a world shortage of 1,000,-00 tons of nitrogen for agricultural purposes. It was estimated, owever, that world nitrogen production in the year 1949–50 ould amount to 3,864,000 tons against programmed con-umption of 4,119,000 tons, which would reduce the shortage or that year to 255,000 tons. Continued rehabilitation of war-orn plants in Europe and Japan, and construction of new xation facilities in various countries were expected to balance itrogen demand and supply by about 1951.

Total world production (including U.S.S.R.) of phosphate ock in 1948–49 reached 18,082,000 metric tons of material veraging about 32% P_2O_5; about one-half came from the Jnited States, one-third from North Africa, one-eighth from J.S.S.R. and one-twentieth from the Pacific islands. Known vorld reserves of commercial grades of phosphate rock were stimated at more than 26,000,000,000 tons with the principal leposits lying in the United States, North Africa, U.S.S.R. and ertain islands in the South Pacific.

The use of radioactive isotopes of plant nutrients as research ools to determine when and how plants utilize their sources of lant foods continued during 1949. These studies afforded nuch information as to the proper time for fertilizers to be pplied to each individual crop, the best location and method or the placement of fertilizers to each crop, and the degrees o which crops utilize plant nutrients added in the form of ertilizers and those already in the soil.

The fertilizer industry continued its chemical and mechanical esearch to discover new and better methods of production of utrients available to plants and to improve existing methods. ustained increases in production of atmospheric nitrogen far bove designed capacities were achieved in many plants. Grow-ng concern over the dwindling reserves of sulphur for the pro-luction of sulphuric acid, a necessary ingredient in the pro-luction of superphosphate, stimulated research into other meth-ds of making the phosphoric acid of phosphate rock available o plants as food. Electric furnace volatilization and recovery, nd direct heat and fusion processes were being successfully perated technically though the economies of such processes pparently did not permit competitive commercial operation. *See* also AGRICULTURE; TENNESSEE VALLEY AUTHORITY.)

(F. S. L.)

HA (Federal Housing Administration): *see* HOUSING.

iction: *see* AMERICAN LITERATURE; BOOK PUBLISHING; ANADIAN LITERATURE; ENGLISH LITERATURE; FRENCH LIT-RATURE; GERMAN LITERATURE; ITALIAN LITERATURE; LITERARY RIZES; RUSSIAN LITERATURE; SPANISH-AMERICAN LITERA-URE; SPANISH LITERATURE.

igs: *see* FRUIT.

iji: *see* PACIFIC ISLANDS, BRITISH.

ilberts: *see* NUTS.

inancial Review: *see* BUSINESS REVIEW.

ine Arts: *see* MUSIC; PAINTING; SCULPTURE; etc.

Finland. An independent republic of northern Europe, Finland has an area of 130,159 sq.mi., including the Åland Islands. Pop. (census 1940) 3,887,217; (by tax list, Jan. 1, 1947) 3,849,097; (mid-1948 est.) 3,958,000. Capital: Helsinki (pop. Jan. 1, 1947, tax list figures) 358,195. Other principal cities: Turku (Åbo) 93,735; Tampere 93,665. Language and nationality: 90% Finnish, about 10% Swedish. Religion: Lutheran Christian. President 1949: Juho K. Paasikivi; prime minister: Karl August Fagerholm.

The Åland Islands, a Swedish-populated archipelago belonging to Finland, lie to the southwest at the mouth of the Gulf of Bothnia. Area: 581 sq.mi. Pop. (tax list, Jan. 1, 1947) 22,787. Chief town: Mariehamn, pop. 3,239.

History.—Finland in 1949 still lay between the forepaws of the Russian bear, still looked out to the west. When Sweden had to decide whether to join the North Atlantic Treaty (*q.v.*) or to stand aloof, it was with one eye on Finland that it decided to remain neutral. Sweden wanted to take no overt step which might antagonize the Soviet Union or excuse any further penetration of Finland—for that would bring the U.S.S.R. to Sweden's own doorstep. Finnish officials expressed satisfaction with the Swedish attitude.

The Russians complained bitterly about the western-mindedness of the Finns, and in press and radio lashed out at Premier Fagerholm. In February it looked as if the combination of outside pressure plus the pincers attack of both right and left at home might force the Social Democrats out of office. But after various reballotings the government squeezed by with a vote of confidence, 97 to 95.

The most dramatic test of government strength came in August when the Communists built up a strike of lumber workers into an all-out campaign against public order and the administration. Troops were quickly sent to the centre of trouble at Kemi, and the government wavered neither in firmness nor self-restraint. Communist leaders then ordered strikes in other industries—transport, food, building and the metal trades. The whole Communist issue was out in the open in Finland; when the purpose of the Communist trade union leaders became clear many non-Communist members simply would not follow their orders. The executive committee of the Federation of Trade Unions voted 8 to 6 to expel the striking Communist-led unions. Two strikers at Kemi were killed in a clash with police, and the Communists called for a general strike on the day of their funeral, Sept. 1. That same day the parliament calmly opened its autumn session; there were demonstrations but no incidents. A delegates' meeting of the trade union federation met a few days later and confirmed the action of its executive committee. There might be two sets of unions, one Communist and one non-Communist (perhaps as many as 130,000 of the 300,000 federation members were Communist), but there would be no united labour front against the government.

By Sept. 6 the strike wave was an admitted failure. The Agrarians still opposed the agricultural price policy, and workers still suffered hardship because of the currency devaluation and other pressures on the national economy. By December unemployment was rising seriously. The situation was so critical that it was suggested that the presidential election set for January be called off. Paasikivi agreed to continue, if re-elected, and in him most of the parties had faith.

Plans for the nationalization of key industries, drawn up by a nationalization committee appointed by the former coalition government, were in December shelved. The existing government was itself Social Democratic, but was dependent for parliamentary support on the bourgeois parties, not on the "folk-democrats" which had once formed part of the coalition. Actually the government moved slightly in the direction of more free enterprise: in July it abandoned the subsidy of grain and doubled the price of grain (to 20 markkaa per kilo for wheat and rye). For the producer this meant a net increase of 20%; for the consumer a doubled price for breadstuffs was partially offset by reduction of the general turnover tax from 10% to 5%.

Prices had (in July) declined about 6% since the peak of 1948, and wages had declined by 5% through automatic adjustment. The cost of living index nevertheless stood at 814 in July (with 1938–39 as 100). The government felt it necessary to devalue the markka by 17.7% (July 5) in relation to foreign currencies. In September, when Britain devalued the pound, Finland accepted another reduction of 30.5%, because of the vital importance of the British market for Finnish pulp.

Despite its economic and financial difficulties Finland continued to enjoy good credit abroad. In August the International Bank for Reconstruction and Development (World bank) granted a loan of $12,500,000. The government of Finland guaranteed the loan, to be repaid by 1964; the Bank of Finland was to relend the money for modernization in the woodworking industries, and small amounts for cement and electric power development. Finland also made arrangements to repay its debts of about $120,000,000 to Sweden; the Swedish government credits of $91,000,000 were consolidated as of Dec. 31, 1949, into one loan to be repaid at 3% by the year 1983.

In August the U.S. congress agreed to set aside all further payments of the World War I debt of Finland to the U.S. totalling about $8,000,000, for cultural interchange between the U.S. and Finland, including equipment for Finnish colleges, education of Finns travelling to the United States and academic enterprises of U.S. citizens in Finland.

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Education.—(1947) Schools: elementary 6,036, pupils 463,400; secondary 299, pupils 81,160; training colleges 8, students 1,341; high schools for adults 71, pupils 4,400; technical schools 444, pupils 35,480. Universities (1948) 3, and institutions of higher education (1948) 4, students 13,500, professors and lecturers 936. Illiteracy (1930) 0.9%.

Finance and Banking.—Budget: (1948) revenue 72,494,000,000 markkaa, expenditure 72,445,000,000 markkaa; (1949 est.) revenue 98,531,000,000 markkaa, expenditure 98,506,000,000 markkaa. National debt (Dec. 1948): 121,617,000,000 markkaa. Currency circulation (July 1949): 28,252,000,000 markkaa. Gold reserve (Aug. 1949): U.S. $6,000,000. Bank deposits (Sept. 1949): 23,100,000,000 markkaa. Monetary unit: markka with an exchange rate of 231 markkaa to the U.S. dollar (Dec. 15, 1949).

Foreign Trade. Imports: (1948) 66,440,000,000 markkaa; exports: (1948) 68,050,000,000 markkaa (excluding 11,550,000,000 markkaa reparations to the U.S.S.R.).

Transport and Communications.—Roads (1946) 37,242 mi. Licensed motor vehicles (June 1949): cars 19,900; commercial vehicles 33,237. Railways (1948): 3,084 mi.; passenger-journeys 44,000,000; freight traffic 15,000,000 tons. Shipping (July 1948): merchant vessels 297, total tonnage 457,437. Wireless licences (1948): 680,000. Telephones (1947): 264,231.

Agriculture.—Main crops (metric tons, 1948): wheat 265,000; barley 214,000; oats 640,000; rye 199,000; potatoes 1,950,000; root vegetables 837,000; cultivated hay 2,425,000; hemp and flax (1946) 2,700. Livestock (March 1948): cattle 1,452,000; sheep 999,000; pigs 304,000; horses (March 1949) 395,000; chickens 1,918,000. Production (metric tons, 1948): milk 1,750,000; butter 30,000; cheese 7,000; meat (including offal) 110,000. Fisheries: total catch (1947) 46,000 metric tons.

Industry.—(1946) Industrial concerns 5,691; persons employed 236,723. Fuel and power: electricity (1948): 2,780,000,000 kw.hr. Raw materials (in metric tons, 1947): pig iron 70,182; ferroalloys 455; steel ingots 71,459; steel castings 5,216; copper (mine production, 1948) 23,322; cobalt 50; nickel 82; selenium 617; gold (fine troy ounces) 10,642; silver (fine troy ounces) 188,821. Forest products (1948): sawn goods 815,000 standards; cellulose 1,080,000 metric tons; mechanical pulp 138,000 metric tons; newsprint 328,000 metric tons; other paper 233,000 metric tons; board and cardboards 139,000 metric tons; plywood 210,000 cu.m.

Fire Insurance: *see* INSURANCE.

Fires and Fire Losses.

In 1949 the value of property destroyed in the United States by fire, including lightning, declined to $667,536,000 from an all-time maximum of $711,114,000 in 1948, a reduction of 6.1%. These figures covered incurred losses reported to the National Board of Fire Underwriters by member companies and included an allowance for unreported and uninsured losses.

The largest amounts of loss by months, in 1947, 1948 and 1949, occurred in March 1947 and 1948 and in December 1949. The smallest amounts occurred in September 1947, August 1948 and Oct. 1949. There was no major conflagration in the United States in 1949, but there were five fires causing losses of about $1,000,000 each and six others where the losses ran between $500,000 and $1,000,000.

The total fire waste for the ten-year period ending with 1949 was 42% more than in the preceding ten years. From 1940, when the loss by fire was $306,469,000, to the peak year of 1949, the total increased every year, except for a $7,000,000 decline in 1943. (*See* also DISASTERS; FORESTS).

(L. E. F.)

Fish and Wildlife Service: *see* FISHERIES; WILDLIFE CONSERVATION.

Fisheries.

The world catch of fish during 1949 was estimated as about 39,000,000,000 lb. Production by European nations was above the prewar figure, and large increases occurred in South Africa as latent or previously undiscovered fishery resources were developed. For North America as a whole, the catch exceeded the prewar level; production in Latin America and parts of Asia showed an upward trend.

Expansion of fleets and exploration of new grounds characterized the fisheries of many nations during the year. Angola began investigation of accessible tuna resources with a view of developing a canning industry, and Norway, which during 1949 undertook tuna fishing on a small scale, considered expansion of the industry and for the first time offered frozen tuna in United States markets. New sardine canning plants were established in South Africa. Iceland arranged for the construction of 10 new fishing trawlers in Great Britain, and the United States army bought 12 New England trawlers and sent them to Germany as an aid to food production in that country. The fishing industry of Mexico bought a number of Gulf and Pacific coast boats from the United States.

The United States was represented by participating delegates or observers at an unusual number of international meetings and conferences which had as their subject the conservation of fisheries, the pooling of scientific information regarding fishery resources and the co-ordination of effort leading to the better development and utilization of these resources.

The Indo-Pacific Fisheries council met at Singapore in March to discuss problems relating to the scientific investigation and development of the fisheries of that area. This was the first of a series of regional councils proposed by the Food and Agriculture organization of the United Nations for the development of the fisheries of the world. At a special meeting called by F.A.O. in Rome in September, the establishment of a second council, this time for the Mediterranean, was discussed.

A special committee of the International Council for the Exploration of the Sea met in Malaga, Spain, in May to consider the tuna fisheries of the Atlantic and Mediterranean waters and to provide means of exchanging scientific information and co-ordinating research on tunas, one of the most important groups in the fisheries of the world.

The United Nations Scientific Conference on the Conservation and Utilization of Resources, which met at Lake Success, N.Y., in August, gave prominence to discussions of the conservation of marine and fresh-water fisheries. Opportunities for developing the fisheries of the Gulf of Mexico and the Caribbean sea were discussed at a meeting of the Gulf and Caribbean Fisheries institute at Miami Beach, Fla., in November.

The first meeting of the International Whaling commission as held in London, England, in May to adopt bylaws, select ermanent headquarters, appoint a permanent secretariat and iscuss changes in current international whaling regulations. he commission was appointed under an International Whaling greement to co-ordinate scientific research on whales and regute whaling activities throughout the world. Norway, Great ritain, Japan and the Soviet Union remained the world's foreost whaling nations in 1949. The United States operated only ne shore station, at Eureka, Calif. No United States factory ips had worked in the Antarctic since 1940.

Three new international conventions affecting fishery matters ere approved by the United States senate during the year: 1) the International Convention for the Northwest Atlantic isheries; (2) the Convention between the United States and Iexico for the Establishment of an International Commission or the Scientific Investigation of Tuna; and (3) the Convenon between the United States and Costa Rica for the Establshment of an Inter-American Tropical Tuna Commission.

The United States fleet, through reduced building of new raft, was somewhat smaller than in 1948. One thousand new shing boats were documented in 1949, 184 less than the numer documented the previous year. Sales of vessels to other ountries further reduced the size of the domestic fleet.

The total catch by United States fishermen showed little hange as compared with recent years and was expected to total bout 4,500,000,000 lb. However, the trend toward lower prices oted during the concluding months of 1948 continued, with the esult that the total value of the catch to fishermen was less han $300,000,000, its lowest value since 1946. Even canned sh brought less than in 1948, although the pack was larger, eaching 800,000,000 lb. Fish oils, vitamin oils and fish meals hared in the price decline. Imports of fishery products coninued to increase, exceeding exports.

The United States government vigorously pursued its proram of research and exploration in waters of the United tates and its possessions. Three vessels were scheduled for use n fishery research and exploration by the Pacific Oceanic Fishry Investigations unit of the fish and wildlife service based at Ionolulu, Hawaii. The vessels "Henry O'Malley" and "Hugh I. Smith" began explorations for tuna in the tropical and subropical seas between Hawaii and the Palaus during the concluding months of the year, and the purse seiner "John R. Manning" as under construction for use in the central Pacific area beinning in 1950. This program was authorized by the 80th conress in recognition of the growing world importance of the tuna sheries and other oceanic resources of the region.

The fish and wildlife service chartered the trawler "Deep Sea" or a survey of the fishery resources of Bering sea. The survey, n its early stages, indicated certain areas where fishing would e unprofitable because of the set of cold currents from the iberia coast or the presence of rough bottom. In other areas, owever, catches of flounders, capelin and cod of excellent maret size indicated the value of determining as definitely as possile the abundance of these fishes and their capacity to support ermanent fisheries.

The 100-ft. troller "Oregon" was used by the fish and wildlife ervice in an exploratory tuna fishing operation off Oregon, Vashington and southeastern Alaska to determine the areas here oceanic conditions were suitable for albacore. The landig of albacore in Alaska ports in 1948 for the first time sugested that these valuable tunas might occur in commercial bundance farther north than had usually been supposed.

NEWFOUNDLAND COD FISHERMEN at Harbour Grace in 1949, with a catch for eventual sale to Mediterranean countries, the West Indies and South America. But with 13 quick-freezing plants in Newfoundland, more and more frozen cod fillets were being marketed in the U.S. where they fetched higher prices

Other vessels were engaged in studying oceanic conditions ffecting the sardine fisheries off California and Oregon, in takig a census of the fish populations of Georges Bank off the coast of New England and in studying oceanographic conditions in the Gulf of Mexico in relation to the sporadic occurrence of the disastrous "red tides." Another vessel was sent to the Gulf late in the year to undertake fishery research in connection with the newly established Gulf States Marine Fisheries commission, for which the fish and wildlife service had been designated the principal research agency.

Important technological developments of the year were the use of nylon nets of extreme efficiency, the development of gear for trawling in deeper water and tests of the midwater trawl first used in Denmark. United States fishermen also became interested in a new German electrical fishing device. Several New England ports made increased use of once discarded species for the manufacture of meal and oil, and the formerly wasted "stickwater" from fish meal and oil plants was diverted to an increasing extent to the production of condensed fish solubles.

Aside from minor fluctuations, there were few important changes in the landings of the principal species comprising the United States catch. Menhaden landings continued to dominate the field in terms of tonnage, with the 1949 catch amounting to approximately 1,000,000,000 lb. While slightly less than the quantity caught in 1948, this catch was one of the largest in the history of the fishery. The California pilchard fishery continued its slow recovery. A sudden scarcity of pilchards which set in about 1945 occasioned a series of extremely small catches in a fishery that formerly averaged about 1,000,000,000 lb. annually: 530,995,000 lb. in 1946, 272,236,000 lb. in 1947, 361,907,000 lb. in 1948 and an estimated 600,000,000 lb. in 1949. The pack of canned pilchards was expected to reach 3,900,000 cases for the year, as compared with 2,654,149 cases in 1948.

Tuna fishing of Central America slackened considerably during the early months of summer and later in the year as the price of canned tuna declined and canners were unable to guarantee fishermen the desired prices. However, the pack for the year was expected to reach 7,000,000 cases, approaching the record 1948 season.

Except for heavy runs of pink salmon in Southeastern Alaska and the Puget sound district of Washington, salmon continued to be scarce, and the pack for the year totalled about 5,400,000 cases. The previous year's pack was 4,824,966 cases. The Maine sardine industry had a poor early season, but heavy runs of fish late in the year raised the pack to about 300,000,000 cases, showing little change from the record pack of the previous year.

Rosefish led all other Atlantic food fish with a production of about 238,000,000 lb. The Atlantic mackerel fishery, traditionally subject to extreme fluctuations, had one of its poorest seasons in years. Early fall catches of shrimp on the Gulf coast indicated a good season. The trawl fisheries of Washington and Oregon were less active than formerly.

The market for fish meal and oil had begun to decline in 1948 after the war years of brisk demand; the downward trend was accelerated in 1949. Prices for oil showed a drastic decline, and with increasing imports and heavier production in the California pilchard fishery, prices for meal were also affected. Total production of meal was estimated as somewhat more than 200,000 tons; of fish oil, 15,500,000 gal. Increasing imports, synthetic products and depleted fisheries hampered the production of natural vitamin oils.

Freezings of fishery products were slightly under the preceding year—290,000,000 lb., as compared with 295,000,000 lb.—but monthly holdings of frozen fish reached an all-time high record on Dec. 1, when 159,000,000 lb. were in storage.

San Pedro, Calif., remained the leading fishing port in the United States in terms of the tonnage of fish received. This is the chief port for the tuna, mackerel and pilchard fisheries of California. It handled about 540,000,000 lb. of fish in 1949. On the Atlantic coast, Gloucester, Mass., remained the leading port for fresh fish, with landings of about 233,000,000 lb., mostly rosefish. Lewes, Del., the principal menhaden port, received about 156,000,000 lb.

Sealing operations on the Pribilof Islands, carried on under the supervision of the United States government, resulted in a take of 70,891 fur-seal skins, as compared with 70,142 in 1948. The fur-seal herd consisted of approximately 4,000,000 animals, having increased from a low point of 132,000 seals in 1910 under a program of conservation. Average prices for seal skins at the fall auction in St. Louis were $55.93 each, with 25,394 skins sold. At the spring auction, 27,862 skins were sold for an average price of $59.55.

An interesting research development of the year was the conclusion of an agreement between the Atomic Energy commission and the fish and wildlife service to conduct co-operative research on shellfish and other marine organisms by the use of radioactive tracer methods. The research project, at the Beaufort, N.C., laboratory of the service, had several objectives: (1) to learn more about the accumulation in marine life of radioactive material and its possible effects on shellfish; and (2) to determine what natural foods are required by oysters for growth and fattening, as an aid to conditioning oysters for market. (R. L. Cn.)

Canada.—Intense federal government activity through the department of fisheries highlighted the industry during 1949. A government statement of policy on May 5 was developed into a national program to stabilize Canadian fisheries through a better understanding of the problems peculiar to each region. Major projects under direction of the Fisheries Research board of Canada included: testing of goldeye resources of Lake Claire, Alta., to assure a seasonal catch of 250,000 lb. (the total Canadian goldeye catch in 1947 fell to 82,000 lb.); predictions of size and time and place of Pacific coast salmon and herring runs to guide the industry; invention of a new railway refrigeration car to permit 208-hr. transportation of fish in prime condition in 90° F. weather; improved cooling and packaging of fish for successful air freight carriage; establishment of cold-storage warehouses in major cities; government help in improving retail distribution, with special emphasis on quick-frozen packaged products; discovery of a new scallop bed off Prince Edward Island; and establishment of a government kitchen to make fish a more popular food. Parliament improved the Fish Inspection act to provide better government control of fish shipping, storing and retailing. The annual per capita consumption passed the 12.2 lb. mark, but still fell far short of Europe's average of 45 lb.

During the 1948–49 fiscal year the Fisheries Prices board spent $1,250,000 of federal funds to support the industry. Exports fell off to $41,800,000 (excluding Newfoundland) for the first seven months of 1949, compared with $51,600,000 for the same 1948 period, and federal authorities therefore welcomed lower tariffs through the Annecy agreements. These took effect Jan. 1, 1950, and resulted in lower barriers for Canadian herring, salmon, cod, lobster and mackerel in dried, smoked and canned forms in Italy, Greece, Denmark, Sweden, Dominican Republic, Haiti, Liberia, Czechoslovakia and the United Kingdom.

The main provincial developments included: British Columbia's new tuna industry landed 2,200,000 lb., compared with 2,174,000 lb. in 1948, and the province's game fish experts reported that by feeding fresh-water shrimps to Kamloops trout their size could be increased from a normal 1½ lb. to 3½ lb.; Saskatchewan fisheries branch found that bluegills, large-mouthed bass and black crappie could be successfully reared in some water conservation reservoirs; Ontario released about 575,000,000 fry and fingerlings of eight kinds of game fish and three kinds of commercial fish.

Internationally, Canada agreed to an International Commission for the Northwest Atlantic Fisheries, warned U.S. fishermen that the three-mile limit would be strictly enforced and announced that harbour seals were proved hosts of worms that attack commercial cod fish.

Films of 1949.—*Men of Lunenburg; Red Runs the Fraser* (National Film Board of Canada); *Purse Seining* (Johnson-Hunt Productions); *Tuna Series* (2 films) (Paul Hoefler Productions). (C. Cy.)

Fishing: *see* Angling.
Flax: *see* Linen and Flax.

Floods and Flood Control.

The U.S. flood control act approved Oct. 13, 1949 provided $437,430,400 for flood control work during the fiscal year ending June 30, 1950. The funds were classified as follows: general flood control, $366,330,400; emergency fund, $2,000,000; lower Mississippi river, $67,000,000; Sacramento river, $3,600,000; Mississippi river emergency fund, $500,000. Of the flood control general fund, $518,581,090 was specified for new construction; $3,210,000 for advance planning; and $5,000,000 for preliminary examinations, surveys and contingencies. Exclusive of the lower Mississippi river and the Sacramento River flood control construction was continued or begun on 165 projects in 37 states and Alaska. The $67,000,000 allotted the lower Mississippi river project was designated for work in seven states: Kentucky, Illinois, Tennessee, Louisiana, Missouri, Arkansas and Mississippi.

At the end of June 1949, a total of 256 flood control projects vere in operation; 30 were new. Construction was continued n 98 projects, of which 43 were reservoirs and 55 were of a ocal character, such as levees, flood walls, channel improvenents, etc. Construction was begun on 34 new projects, 9 of vhich were dams and reservoirs.

Reservoirs placed in operation during the fiscal year included he Union Village reservoir, Vt.; the Tully reservoir, Mass.; he Addicks reservoir, Tex.; the Hords Creek reservoir, Tex.; nd the Wister reservoir in Okla. Local protection projects laced in operation included projects at Nashua, N.H.; Holoke, Mass.; Springdale, Mass.; the Conway county levee disricts no. 1, 2 and 8, Ark.; the McLean Bottom levee district o. 3, Ark.; the Henderson county drainage district no. 3, Ill.; rojects at Tucker lake, Ark.; Cincinnati, O.; Aten, Neb.; Hot prings, S.D.; the project at the mouth of the Sangamon river, ll.; projects for the Owasco inlet and outlet, N.Y.; Lancaster, .Y.; Pajaro river, Calif.; the Mill Four drainage district, Ore.; nd projects at Indianola, Neb.; Elkins, W.Va.; Tacoma, Wash.; nd Taylorsville, Ky.

Congress in the first deficiency appropriation act of 1949, nacted May 24, provided funds of $14,000,000 for general lood control projects. In the second deficiency appropriation ct of 1949, approved June 23, 1949, $500,000 was made availble for prosecution of the work on the Fort Worth floodway n the Trinity river in Texas. On Oct. 10, 1949, the president igned another appropriation, which provided, among other hings, $76,000 for the modification of the project at Mandan, .D.

In the first deficiency appropriation act, congress also made vailable $10,000,000 for the repair and restoration of levees nd other flood control works threatened or destroyed by floods.

Channel improvement of the Mississippi river proper was ontinued during 1949 at a number of places below Cairo, Ill. Completed levee construction totalled approximately 1,500 mi. f main stem levees, extending from near Head of Passes, La., o Rock Island, Ill. Co-ordinated with the main stem levees vere 1,000 mi. of tributary levees, practically completed in 949. Below Cairo, work continued on river bank protection. Revetment in place totalled more than 100 mi. of river bank; n addition, many miles of permeable dikes were in place for ank stabilization and channel regulation. The substantially ompleted 2,500-mi. levee system now contained more than ,200,000,000 cu.yd. of earth; it was called the largest earthnoving project in history.

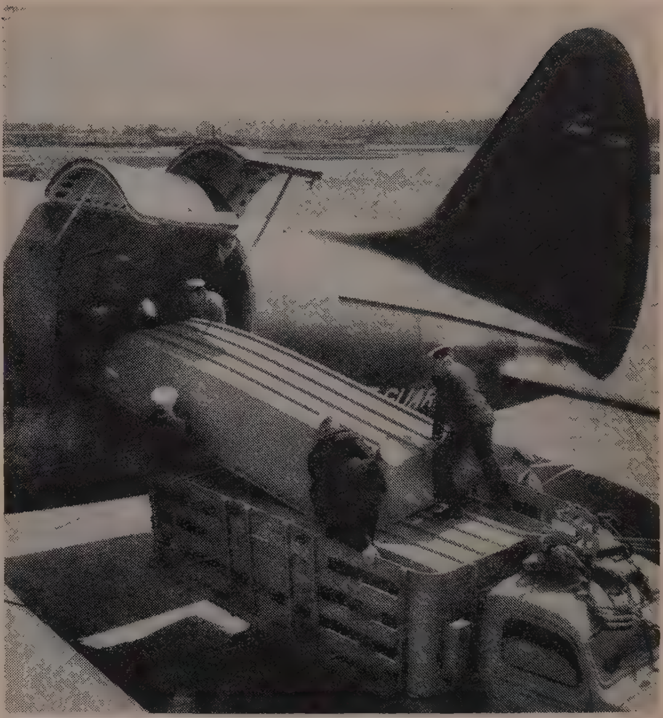
Damaging floods occurred in New England in the Connecticut iver valley during the closing days of Dec. 1948, causing damges running as high as $7,000,000 and claiming the lives of ve persons. Disastrous as the flood was, however, the flood ontrol works that had been completed and were in operation revented damages estimated at $11,000,000.

Damaging floods also occurred along the Potomac river in Virginia and West Virginia during June 1949. Rain fell with uch intensity that communications were disrupted before varnings could be sent. Eleven lives were lost and the total lamage in Virginia was estimated at more than $3,000,000 and n West Virginia at $6,000,000.

In Jan. 1949, minor flooding occurred on the Grand (Neosho) iver from Oswego, Kan., to Pensacola reservoir and on the Verdigris river from Inola, Okla., to the mouth. Major flooding ccurred on the Poteau river from Cauthron, Ark., to Wister eservoir, with minor flooding from Poteau, Okla., to the mouth. Major flooding occurred on the Kiamichi river and on the ittle river and its tributaries, while moderate floods were exerienced on the Red river at Fulton, Ark.

During the early months of 1949, a great amount of snow overed the Missouri river basin, causing some flooding of major streams and their tributaries. However, if the plains states had experienced flood-producing weather in the spring, record flooding might easily have occurred. Fortunately, this did not become a reality.

(G. Hb.)



EMERGENCY FLOOD BOATS being loaded aboard a U.S. coast guard C-46 Commando plane at St. Louis, Mo., in a 1949 test demonstration. In less than two hours, the plane then flew to Louisville, Ky., and unloaded men, boats and radio contact equipment into the Ohio river, ready for service

Great Britain.—The summer of 1949 and the previous winter were both dry seasons, and serious and prolonged floods were few; but local authorities and catchment boards carried out flood control work planned as a result of the serious floods of 1947 and 1948. Many railway bridges in Scotland and northern England damaged in Aug. 1948 were repaired and lines fully reopened to traffic. The River Trent Catchment board considered a scheme, estimated to cost £2,323,700, for major protection works in the Trent valley, which included the widening of certain river stretches and the construction of river barriers at Gainsborough, Lincs. The River Wye Catchment board approved proposals for the second stage of the Monmouth flood relief scheme, and flood relief sewers were constructed in Hampstead, London, and in Salford, Lancs.

In October the first instalment, costing about £750,000, of the Rimrose brook main drainage scheme was put into operation. Its object was to provide drainage facilities for undeveloped lands in the catchment area, where considerable housing development was proposed by the Bootle corporation and the Litherland urban district council, and also to prevent serious flooding which had taken place periodically in Bootle, Litherland and Seaforth, Lancs.

Coast Erosion and Protection.—The Coast Protection act received the royal assent in 1949 and provided for the establishment of both national and local responsibility for coast protection in Great Britain by setting up local coast authorities of two different types to deal with the problems of their areas. It gave wider powers to county district councils or borough councils on the coast, enabling them to carry out works to protect their lands and coastlines. Under these, the minister of health (for areas in England and Wales) or the secretary of state for Scotland could, where many interests were involved, set up coast protection boards, ensuring that the danger of lack of co-ordination evident in the past would be overcome. The bill also provided for financial assistance to the authorities concerned.

Many authorities carried out work in repairing and extending sea defense works. At Seaford, Sus., the strengthening of the sea wall was continued and new groynes were built. The construction of a sea defense wall at Rhyl, Flintshire, began in November, with the object of checking a flood high-water mark which had advanced more than 1,500 ft. between 1871 and 1949. Prestatyn, adjacent to Rhyl, approved a scheme costing £235,000. At Lowestoft, Suff., work on sea defense estimated to cost £130,000 in the next five years was approved. The Essex Rivers Catchment board proceeded with plans to improve existing sea walls at an estimated cost of over £500,000, including work to be undertaken in consequence of abnormal tides during March.

Australia.—The bill authorizing the Snowy river scheme consisting of a vast hydroelectric and irrigation project, including measures for retaining the flood waters for irrigation purposes and estimated to cost £200,000,000, passed all stages in the house of representatives in June. The work was officially begun on Oct. 17 by the first blasting at one of the dam sites. In June, following heavy rain, the Hunter river burst its banks and caused an area of 200 sq.mi. around Maitland and Kempsey, N.S.W., to be submerged. Some streets in Sydney were also flooded to depths of 5 ft. In order to minimize the dangers of floods in the future the New South Wales government adopted a flood control for the Hunter valley to cost over £10,000,000. The scheme comprised the construction of three reservoirs to be operated solely for flood control, while five other reservoirs were to be primarily used for irrigation.

Austria.—A week of continuous rain in August caused the biggest summer floods for several years in many alpine rivers. The Danube rose 18 ft. in 36 hr. near Vienna.

India.—Among the irrigation and flood control projects under construction was Bhavani dam in Madras consisting of an earth structure below the junction of the Moyar and Bhavani rivers, where much excavation was done during World War II.

Italy.—Floods occurred in the provinces of Benevento, Avellino and Salerno at the beginning of October as a result of torrential storms. An area of 1,000 sq.mi. was devastated and more than 30 people lost their lives. In November the river Reno broke its banks and flooded more than 30,000 ac. of farmland near Bologna.

Pakistan.—The Lloyd barrage on the river Indus, part of the world's greatest irrigation scheme, was the subject of grave concern when investigation showed serious cracks in the ashlar masonry of the piers, and remedial work was undertaken.

Uganda.—Construction of the Owen Falls dam on the River Nile was commenced in the autumn of 1949. The scheme was for hydroelectricity in addition to irrigation and flood control and would enable abnormally high flood waters to be conserved as "century storage" or continuous storage over several years in conjunction with existing dams on the lower course of the river, where water is stored during floods, to be used during the same year. (*See* also DAMS; DISASTERS; IRRIGATION; METEOROLOGY; SOIL EROSION AND SOIL CONSERVATION; TENNESSEE VALLEY AUTHORITY.) (J. KD.)

Florida.

The extreme southeastern state of the United States, Florida is called the "Peninsula state" because of its peculiar outline. Its coast line, not taking into account the numerous bays and indentations, is greater than that of any other state, extending 472 mi. along the Atlantic and 674 mi. along the Gulf of Mexico. Area: 58,560 sq.mi., of which 4,298 sq.mi. are water surface; population (1940): 1,897,414, of which 1,045,791 were urban and 851,623 were rural; 1,381,986 white, 514,198 Negro and 1,230 of other coloured races. Only about 60,000 were foreign-born. Capital: Tallahassee (16,240 in 1940). The larger cities are Jacksonville (173,065), Miami (172,172) and Tampa (108,391). Population figures for Tallahassee and the three largest cities, Jacksonville, Miami and Tampa, by the state census of 1945 were 18,105; 206,442; 192,122; and 124,476, respectively. The estimated population of Florida, July 1, 1949, according to the U.S. census bureau, was 2,494,000.

History.—The state elective administrative officers in 1949, whose terms expire in Jan. 1953, were Fuller Warren, governor; R. A. Gray, secretary of state; Richard W. Ervin, attorney general; C. M. Gay, comptroller; J. Edwin Larson, state treasurer; Thomas D. Baily, superintendent of public instruction; and Nathan Mayo, commissioner of agriculture.

In Jan. 1949 a new administration in the state government was inaugurated. The legislature met in April. A fencing bill was passed to keep cattle off the highways and a citrus marketing bill was enacted setting up certain standards for shipping citrus fruit to keep immature fruit from being put on the market. A legislative reference bureau was created. An important movement of the year was the establishment of a citizens constitutional committee for the revision of the state constitution. In a special session of the legislature in September, a limited sales tax was passed.

Education.—Enrolment in the public schools for 1948–49 through grades 1–12 was as follows: white 352,023; Negro 114,935; total 466,958. There were 1,502 elementary and 763 secondary public schools in the state with instructional staffs (not including 182 supervisors) totalling 16,232 and 733 principals, of whom 12,286 teachers and 605 principals taught in the schools for whites and 3,946 teachers and 128 principals in the schools for Negroes.

Social Insurance and Assistance, Public Welfare and Related Programs.—Florida disbursed for state welfare through the state welfare board $42,661,410.04 in 1948–49. From grants by the federal government, the state received in 1948–49 for old-age assistance $17,862,069.25; for dependent children $6,394,063.50; and for aid to the blind $891,714.25; total $25,147,847. Disbursements for old age assistance were $29,243,352; for dependent children $9,745,032; and for the blind $1,471,645; total $40,460,029. Administration and other welfare services $2,201,380.54. The unemployment benefit receipts were $9,660,916.22 with net benefit payments of $8,154,968.10.

The appropriations for various prisons and other institutions for 1949–50 were: the prison at Raiford $1,077,450 with $23,260 contingent fund; the prison farm at Belle Glade $247,000; the industrial school for boys at Marianna $403,228; the industrial school for girls at Ocala $120,000, with $600 contingent fund; the correctional institution for boys at Apalachee $181,960, with $8,000 contingent fund. The state also supports a state hospital for the insane at Chattahoochee and a second hospital at Arcadia, the Florida Farm Colony for the feeble-minded at Gainesville and the Florida School for the Deaf and Blind at St. Augustine. The appropriations for these institutions for 1949–50 carried the sums of $4,990,450, with $125,000 contingent fund, including the hospital at Arcadia; $473,840; and $590,910, respectively.

Communications.—The total highway mileage in the state in 1949, exclusive of roads built for military purposes, was 51,518 mi., of which approximately 24,642 mi. were paved or hard-surfaced. Disbursements for the year ending Dec. 30, 1949, for maintenance and construction, amounted to $32,024,284.45. The state road department's tentative budget for 1950 for construction was $59,283,852.00 plus $8,491,145.09 for maintenance and other departmental costs. Florida in 1948, the latest report available, had approximately 5,000 mi. of railroads, exclusive of yard tracks.

Banking and Finance.—On June 30, 1949, there was a total balance in the state treasury of $42,718,775.13 with outstanding warrants and adjustments of $17,318,172.59. The state is constitutionally forbidden to incur a debt by borrowing except to put down insurrection and repel invasion. The constitution also prohibits the legislature from levying an income tax, forbids any state ad valorem tax on real estate and exempts homesteads from taxation by local taxing units up to the value of $5,000.

On June 30, 1949, there were within the state 61 national banks with deposits amounting to $1,165,425,000 and 125 state banks and trust companies with deposits of $517,775,968.72 representing total deposits of $1,683,200,968.72, a gain in deposits of $21,311,246.11 in the fiscal year.

Agriculture.—The citrus production for the season 1948–49 and the estimates for 1949–50, respectively, were as follows: oranges (including tangerines) 62,700,000 and 65,400,000 boxes; grapefruit 30,200,000 and 25,000,000 boxes; limes 200,000 and 250,000 boxes.

The sale of truck crops including strawberries for the year 1948 was estimated at $90,892,000.

On Jan. 1, 1949, the livestock resources of the state were as follows: 1,007,000 beef cattle and calves; 148,000 milk cows; 666,000 swine; 14,000 sheep; 25,000 horses; and 29,000 mules.

Manufacturing.—In 1947, according to the census of manufacturers, there were 2.807 manufacturing establishments in Florida. There were 701 food products plants employing 19,565 persons and having a total

Principal Agricultural Products of Florida

Crop	1949	1948	Average, 1938-47
orn, bu.	8,983,000	6,910,000	7,612,000
bacco, lb.	25,061,000	20,846,000	19,045,000
tatoes, bu.	5,428,000	3,745,000	4,240,000
gar cane, short tons.	1,091,000	1,056,000	889,000

nnual pay roll of $42,976,000. Lumber, rough and dressed, millwork, urniture and fixtures, wooden boxes, pulp, paper and gum and wood aval stores employed approximately 25,000 persons in 656 plants with pay roll of nearly $50,000,000. Wood pulp and paper manufactured Florida in 1948 were valued at approximately $103,000,000. The 8 ills in Florida manufacturing pulp, paper and paperboard employed bout 6,000 persons in 1948, had a pay roll of approximately $25,000,000 nd used about 1,600,000 cords of wood, about half coming from Florida orests. Florida wood-pulp production for 1948 was 1,221,200 standard ords. The total estimated value of wood products for Florida for 1949 as about $155,000,000.

In 1947 there were 74 plants manufacturing cigars in Florida with roducts shipped valued at $45,901,000. These plants employed 8,613 ersons and had an annual pay roll of $13,085,000.

Mineral Production.—Florida has only limited resources in minerals, but as large and rich deposits of phosphates, lime and limestone and less-xtensive though highly valuable deposits of kaolin and fuller's earth. he value of the state's mineral production in 1949 was estimated at ore than $55,000,000. (A. N. P.)

lour.

For the first eight months of 1949, wheat flour production in the United States amounted to 155,500,000 wt., compared with 185,300,000 cwt. for the corresponding eriod of 1948. The sharp downward production trend thus ontinued from 1948, when the annual total dropped to 279,-00,000 cwt. for the calendar year, from the 1947 all-time high f 305,500,000 cwt., a 9% decrease. The peak production onth for the first eight months of 1949 was January, with 2,380,000 cwt., compared with 24,400,000 and 28,190,000 cwt., espectively, for the corresponding months of 1948 and 1947.

The monthly average flour extraction rate gradually dropped rom a high of 72.8% for Jan. 1949 to a low of 71.4% for ugust. This compared with annual averages of 72.8% and 2.6% for 1948 and 1947, respectively.

Milling production data, as reported in 1949 by the U.S. epartment of commerce, bureau of the census foods section, ere based on information furnished by flour mills representing bout 96% of the total U.S. production.

Gross Distribution of U.S. Flour Production.—Net exports f wheat flour for 1948 amounted to 55,300,000 cwt., a de-rease of 29,740,000 cwt. or 35.0% from 1947, when the net eached an all-time high of slightly more than 85,000,000 cwt. lour procured for military usage (total for all armed services) as 22,100,000 cwt. for 1948, only 600,000 below the five-year verage, 1944–48. The flour remaining available for domestic onsumption during 1948 was 201,700,000 cwt., an increase of nly 4,000,000 over 1947. This increase was a consequence of harply reduced exports rather than a result of flour production. *See* WHEAT.)

Bleaching and Maturing Agents.—The report of E. Mel-anby concerning the toxic effects of nitrogen trichloride-treated our on dogs had led to an intensive re-evaluation of the bio-ogical effects of the available flour bleaching and maturing gents. The status of this investigation in 1949 was summarized y Aaron Arnold, whose tabulations describe the biological ffects of the principal flour bleaching and maturing agents on ogs, rats, rabbits, monkeys and humans. No effect, toxic or therwise, was obtained by the use of the oxidizing agents, leaches and related materials which were commonly used to nprove the baking properties of flour.

Flour and Cereal Enrichment.—Progress in cereal enrich-ent, principally flour, was described by Robert R. Williams, hairman of the Committee on Cereals, Food and Nutrition oard of the National Research council. The importance of our enrichment to human nutrition generally is based on the act that 72% of the total food calories consumed by the orld population are composed of cereals: wheat, rice, corn and other grains. Since milling into flour is virtually necessary to the preservation of grains under existing modes of food distribution and since modern milling methods involve large losses of vitamins and minerals, flour enrichment as a part of the milling process is logical and commercially feasible. Basic improvement of all white cereals, milled or otherwise, is considered to be an inevitable world-wide measure in the interests of improved human nutrition.

In addition to wide acceptance of the flour and cereal enrichment program in Great Britain and continental U.S., the program was introduced in the Philippines, Cuba and Puerto Rico. In the latter country the enrichment of all white flour was made a legal requirement.

Flour Handling.—Certain legal restrictions on the re-use of flour sacks gave impetus in many states to the semibulk handling of flour, also known as the "tote-Bin system." The handling of 3,000 to 3,500 lb. of flour in one metal bin presented substantial advantages with respect to sanitation, rapidity of handling, elimination of handling losses and economy of storage space. Contamination as a result of foreign odours, dust, dampness, rodents and insect infestation was eliminated by the use of properly designed metal bins. A general discussion of the system was given by Thomas R. Freer and D. M. Binger.

Northwestern Flour Characteristics, 1949 Crop.—Technical information gathered from many milling and baking laboratories during the first half of the crop season was summarized by Charles A. Glabau. A majority of the baking technologists reported good to excellent colour characteristics, fermentation tolerance and gas retention. Other important quality characteristics, including ash and protein content, absorbtion and response to mixing showed the usual quality variations without significant trends from previous average values.

Laboratory investigations of new crop characteristics of cracker and cookie flours were surveyed over a period of years by W. H. Hanson. The effects of the ageing of wheat upon flour quality were studied for the purpose of determining which laboratory tests were most useful in the evaluation of new crop flours. Viscosity measurements of the flour by the MacMichael method showed a tendency toward higher values during ageing of the wheat, although the general conclusion was that neither this test nor any other revealed consistently significant quality differences. The usual chemical methods were supplemented by cookie baking tests, "pup" loaf baking tests and mixograms. Mixogram data indicated that dough elasticity and mixing tolerance increased slightly with ageing of the flours. (*See* also BREAD AND BAKERY PRODUCTS.)

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Food and Agriculture Organization: *see* FOOD SUPPLY OF THE WORLD.

Food and Drug Administration: *see* DRUG ADMINISTRATION, U.S.

Food Supply of the World.

The world food situation became increasingly easier during 1949 and in a few sectors burdensome surpluses were emerging. In great contrast with the uneasy, if not actually dangerous, food situation of the world in the early part of 1948, the wide-spread favourable harvests of that year were followed by increased food supplies in 1949 in all major regions except the United States and Canada. Prospects for meeting the effec-

CHAKRAVARTI RAJAGOPALACHARI, governor general of the Dominion of India, plowing land on the Government House estate for the cultivation of food. Urging all India to raise as much food as possible, the governor general hoped to set an example by beginning with uncultivated Government House land

tive demand for food in the 1949–50 consumption year were brighter than in any of the preceding postwar years, although a large proportion of the world's population nevertheless would not be and had not been adequately nourished by some standards. Food rationing and other restrictions were widely relaxed or abandoned. The improved situation was not so much the result of extremely large crops in one or two areas (as had previously been true as regards the U.S.) nor enormous outturn of one major crop, but rather a general improvement in many categories, but particularly bread grains, feed grains, fats and oils and fruit and vegetables. Carryover grain stocks in the four principal exporting countries on July 1, 1949, were 72,800,000 tons, about 68% larger than the small stocks of the previous year. Livestock in Europe might be mentioned as one item showing much improvement following the large crops of 1948 and the increased abundance of coarse grains for import.

Essentially 1949 was a year without famine; crops were not very poor in any large area; malnutrition was endemic but not epidemic. The western part of the Mediterranean area, particularly parts of Spain and Portugal, continued excessively dry with resulting damage. The drought over some other parts of western Europe, especially France, relaxed before great damage was done. Bad drought was reported from South Africa. Both drought and flood accompanied by great damage were rumored from north China. Some damage was reported from the western prairie provinces of Canada where subsoil moisture continued low.

Table I.—*World Food Production by Commodities and by Areas Compared with Prewar*

(Per cent of prewar)

Food commodity	1946–47	1947–48	1948–49	1949–1950*
Bread grains	94	96	102	101
Rice	92	93	97	99
Coarse grains	104	97	110	104
Fats and oils	85	88	94	100
Sugar	90	92	108	106
Meat	94	93	94	97
Dairy products	88	87	90	95
Potatoes	84	83	105	96
Area				
Far east	90	92	95	96
Europe (excluding the U.S.S.R.)	76	79	89	93
U.S. and Canada	135	128	138	135
Latin America	114	114	118	120
Australia and New Zealand	96	109	106	107
Africa and near east	—	101	116	118
World average (excluding the U.S.S.R.)	95	97	104	105

*Preliminary estimate.

In some exporting countries, particularly the U.S., there began to be no little concern about the possibility of agricultural surpluses. Substantial reduction in planted acreage of wheat and corn crops to be harvested in 1950 in the U.S. were ordered. Government storage programs were expanded and exports subsidized. (*See* AGRICULTURE.)

The world food supply situation by commodities and areas is summarized in Table I.

Bread Grains, Wheat and Rye.—World bread grain production estimates for 1949 were revised downward somewhat during the year as additional information became available and near the year end were estimated at 233,000,000 short tons, slightly smaller than the 238,000,000 tons of 1948 but a bit above the average 229,000,000 tons of 1935–39. The world wheat crop was finally placed at 6,185,000,000 bu., a figure somewhat below the 6,385,000,000 bu. of 1948 and moderately in excess of the 6,010,000,000 bu. average for 1935–39. The decrease was primarily the result of decline in North American production, the U.S. producing 1,146,463,000 bu. in 1949, compared with 1,313,534,000 bu. in 1948. The Canadian crop was about 25,000,000 bu. smaller than the 1948 harvest but approximately 50,000,000 bu. in excess of the prewar average. The U.S. crop was the sixth consecutive crop of more than 1,000,000,000 bu. but almost 250,000,000 bu. below the record, although about 400,000,000 bu. more than the prewar average.

The world rye crop of 1949 totalled 1,655,000,000 bu., as against 1,665,000,000 bu. in 1948 and 1,730,000,000 bu. prewar average (1935–39). The increase was largely in Europe, that continent in 1949 producing 705,000,000 bu., compared with 660,000,000 bu. in 1948, but 765,000,000 bu. average prewar. North America produced only about half as much as in 1948.

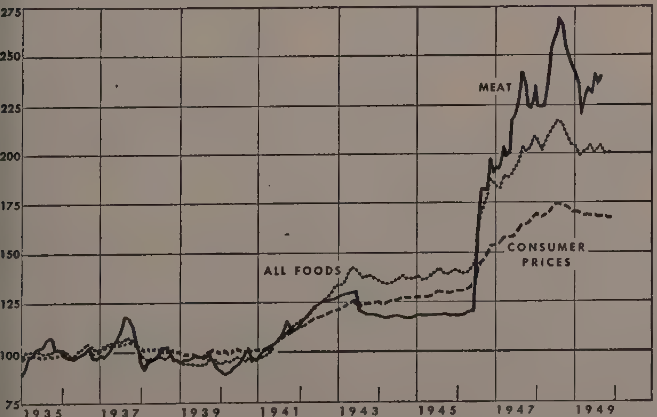
The abundant bread grain crops of 1949 were particularly important in assuring the continuation if not improvement of the diets of western Europe, in providing continuing stocks for export from the chief exporting countries to the densely populated deficit areas of Europe and Asia. But as year end carryover stocks became more abundant, fears of unmanageable surlus began to mount in exporting countries. The favourable tuation as regards bread grains gave preliminary promise at ie end of 1949 of continuing. Although winter wheat seedings ı the U.S. were, by official order, only 85% of the record creage seeded in the autumn of 1948, condition of the new rop was excellent and initial indications were that the prospecve harvest might be nearly as large as in 1949. Rye acreage as expanded 12% and the condition was excellent. Reports on ie new crop in Europe were favourable.

Feed Grains.—A major difference in regard to the world ood supply in 1949, contrasting with the immediate postwar ears, was the relative abundance of the feed grains, a situation ccounted for primarily by the record corn (maize) crop of the .S. in 1948, from which there was a record carryover followed y a large crop in 1949. The 1949 crop of 3,377,790,000 bu. plus carryover of 815,376,000 bu. gave a new record total supply. 'he corn (maize) crop for the world amounted to about 5,680,00,000 bu., second only to the record crop of 5,990,000,000 bu. ı 1948–49 and much in excess of the prewar average of 4,750,00,000 bu.

Other feed grains, oats, barley and grain sorghums, yielded bundantly in 1949, although not up to the 1948 level. The orld oat crop was estimated at 3,980,000,000 bu., as compared ith 4,200,000,000 bu. in 1948. Europe's 1,375,000,000 bu. was ightly more than in 1948, but nearly one-fifth less than the rewar average. The world barley crop was estimated at 2,250,00,000 bu., compared with 2,380,000,000 bu. in 1948 and about 00,000,000 bu. less than the prewar average.

The significance of these cereals not widely used for bread es partly in their service as buffer stocks against human staration but more especially in their indirect use as concentrated vestock feeds supporting the continuing expansion in meat and vestock production. Whereas in 1947–48 imports of feed rains into western Europe were very modest because of short upplies in exporting countries, exports from the U.S., mostly ɔ western Europe, during 1948–49 of feed grains were large nd were expected to be still larger in 1949–50. These exports ould be based primarily on the record corn supply.

Rice.—The world's greatest food crop for direct human conumption, in terms of the number of people preferring that taple, is rice. In terms of total world production, it had not et regained prewar levels; the estimated crop was 144,200,000 netric tons (paddy) in 1948–49, compared with 142,500,000 ons in the previous year and approximately 147,400,000 tons in he prewar period. Nearly 95% of production was in Asia. The J.S. crop of 89,141,000 bu. was a record one and acreage was o be reduced in 1950. The distribution of production of rice in elation to consumption was very different from the prewar period, and world trade in rice was only about 40% as large as in the prewar period. In particular, the major exporting areas of southeast Asia, because of somewhat smaller production but primarily because of political disturbances, transportation difficulties and increased consumption by the producers, did not provide the usual export quantities for the densely populated deficit rice-consuming areas of the far east. To some extent this gap was filled by wheat and other grains from Australia and the Americas; the U.S. exported 64,200,000 bu. of wheat to Japan and Korea in 1948–49. Rice under International Emergency Food council suggested allocation of 1949 amounted to only 3,813,000 metric tons. Nevertheless, the situation was somewhat more favourable: Japan harvested an estimated 599,105,000 bu. crop, compared with 586,004,000 bu. in 1948; production and export from the surplus areas of southeast Asia seemed to be on the upgrade and prices appeared to have stabilized.



ONSUMER PRICES and retail prices of meat and of all foods in the U.S., 935–49 (1935–39=100), based on bureau of labour statistics data for modrate-income families in 56 large cities (Source: Bureau of Agricultural conomics)

Potatoes.—The 1949–50 crop was about 8,000,000,000 bu., compared with 8,764,000,000 bu. in 1948–49 and 8,300,000,000 bu. average in the prewar years 1935–39. The European crop (excluding the U.S.S.R.), in particular, declined sharply to 4,414,363,000 bu., compared with 5,054,390,000 bu. in 1948, and was about 10% below prewar. The U.S.S.R. crop was indicated at 2,800,000,000 bu., a little below 1948 but slightly above prewar. The Canadian crop, as well as that of the U.S., was smaller, although still abundant in relation to demand. Acreage was increased in Europe, but yields per acre declined to 180 bu., compared with 210 bu. in 1948 and 200 bu. prewar. In spite of lower acreage and yields in the U.S., the 1949 crop nevertheless was excessive and the government support program involved $50,000,000 to $60,000,000. Although this was much reduced from the 1948 crop, official goals for the 1950 crop were set much lower at 335,000,000 bu.

Sugar.—World production of beet- and cane-sugar for the 1949–50 season was indicated at 36,646,000 short tons, raw value, 2% less than the record large crop of 1948–49 of 37,249,000 tons, but about 6% more than the prewar (1935–39) average of 34,718,000 short tons. World beet-sugar production, largely in Europe, increased to 11,362,000 tons, compared with 11,071,000 tons in 1948, but continued below the 12,025,000 tons of prewar. Meanwhile, world cane-sugar production of 25,284,000 short tons was about 900,000 tons less than the record large crop of the previous year. Increases in the Philippines, the U.S.S.R., the U.S., Argentina and several European countries failed to offset the decreases of Cuba and some other areas; Cuba declined to 5,300,000 tons from a record 6,675,000 tons in 1947. Per capita consumption continued highly divergent among the various countries, ranging from 93.3 lb. per capita in the U.S. in 1949 to only a very few pounds per person for more than one-half the world's population.

Meat.—The meat supply situation was generally easier in 1949. Pork, poultry and fish were in more abundant supply and prices were lower, whereas high quality beef and lamb were relatively scarce and prices continued high. Total meat consumption per person in the U.S. was expected to approximate 150 lb., compared with 147 lb. in 1948, a record 155 lb. in 1947 and a prewar average of 126 lb. Lamb consumption, however, was only 90% of 1948, whereas chickens and turkeys were consumed at an increased rate, 10% above 1948. Numbers of livestock in the U.S., excepting perhaps sheep, had completed the declining phase of their cycle and were expanding in 1949.

Due to improved feed conditions in 1948 and continuing favourable production in 1949, output of meat increased in 1949 in all major producing areas, although in Europe it was only about 75% of prewar; in spite of large increases in some areas, the world total was still below prewar. Milk cows, however, were given special consideration and world cattle numbers, for beef as well as milk, were placed at a record 761,000,000 head at the beginning of 1949. Hogs, which in Europe are fed largely on potatoes and barley, along with poultry offered the major opportunities for near-future expansion. Meat exports from Argentina, Canada, Australia and New Zealand continued in fair volume to western Europe, particularly to the United Kingdom.

Fats and Oils.—Expansion in the production of most kinds of fats and oils continued in 1949 with consequent easing of the supply situation and the price level. Although significant differences existed among areas and types, the over-all supply approximated the prewar level. On a per capita basis the supply continued below prewar, Germany and Japan being especially low at a consumption level about half that of prewar. Production of fats and oils in the U.S. was at a new record of about 12,010,000,000 lb. as a result of the large near record 1949 crops of soybeans and cotton as well as a large hog crop. Palm oil and coconut oil also became available in larger amounts from tropical areas. The olive oil crop of the Mediterranean basin was abundant. As a result, world exports of this composite food item were expected to be as much as 10% larger than in 1948. Exports from the U.S. were especially large, reaching a record 2,100,000,000 lb. in 1948–49.

Food Prices and Trade.—The decline in food prices continued in 1949. Food prices, particularly those of food raw materials such as grains and fats and oils, which reached their postwar peaks in the free markets of the world early in 1948, subsequently declined sharply but irregularly. Prices of meat and livestock products were relatively resistant to the decline. The over-all decline amounted to 10% to 20% with a few items showing extreme declines to one-third to one-half their former peak levels. As a result, although declines on the retail level were much less abrupt and smaller, black markets in food practically disappeared, rationing and other restrictions were removed in most countries and a buyer's market began to appear.

Because of cheapness, storability, availability and widespread acceptability, the bulk of food moving in world trade continued to be grains. In 1948–49, world exports of grain and grain products reached 36,200,000 metric tons, compared with 35,600,000 tons in 1947–48, and the largest since 1931–32, but still less than the record 40,600,000 tons moved in 1928–29. Of the 1948–49 total, 26,600,000 tons were bread grains, and 9,600,000 tons were feed grains. In 1948–49 (mostly from 1948 crops), grain supplies carried over at year end in the four principal exporting countries increased 68% as compared with 1947–48. For the first year since before World War II, exportable supplies were in surplus compared with provisional import programs. In fact, there were signs of trouble ahead in the efforts of most countries to restore or exceed prewar production and to reduce imports, particularly from hard currency areas. The widespread devaluation appeared at the end of 1949 not to have affected agricultural prices or trade very substantially.

Estimated exports in 1949 included sugar to about 10,000,000 short tons, of which more than 80% came from the western hemisphere, compared with less than 50% before the war. World supply and demand continued in full balance. Prices were rather sluggish and slightly down compared with 1947, Cuban raws falling at times slightly below four cents per pound.

Table II.—*Supplies of Major Foodstuffs Entering World Trade*

(In millions of metric tons)

Commodity	Prewar	1946–47	1947–48	1948–49	1949–50*
Cereals (excluding rice)	29.4	28.7	35.0	36.2	35.0
Rice (milled)	7.8	2.7	3.8	4.3	4.5
Fats and oilseeds (fat content)	5.9	3.2	4.0	4.8	5.2
Sugar (raw basis)	11.5	8.0	9.0	10.7	10.0
Meat	1.9	1.9	2.0	1.9	2.0

*Preliminary estimate.

Food Situation by Areas.—European food production in 1949 was not quite so large as in 1948. In Europe the 1949 cereal harvests averaged some 5% below the previous year, the western and southern portions in particular dropping below the previous year. Potatoes were lower, but sugar increased, as did fats and oils and livestock and dairy products. Nevertheless, the domestic food supply of Europe in 1949 was still somewhat less than prewar levels, and population had increased. The major food item, bread grains, was about 92% of the prewar average. Domestic supplies of meat, dairy products and poultry were still low compared with prewar. Nevertheless, the situation had relaxed sufficiently to lead to derationing of bread, lowering of the flour extraction rate and reduction or discontinuing of the mixing of coarse grains in bread flour. Stockpiles of grains were increased. A disturbing feature was the extent to which the world import requirements of food, particularly into Europe, had come to depend so overwhelmingly on the vast but unstable production of North America. The occupied area of western Germany was reported to have a volume of food production in 1949 some 29% larger than in 1948.

The food situation in the U.S.S.R. appeared to be more favourable than at any time since World War II, whether judged by exports, observers' reports or the situation as to rationing, but there were reports of delay in harvesting, because of excess rains, and delay in compulsory deliveries.

The 1949 grain crops of India and Japan were slightly better than in 1948. The situation in China was less clear because of domestic warfare. Natural conditions for the rice crop, the major cereal item of the diet, were at least as favourable as in 1948. Civil disturbances in Burma continued to restrict the movement of the 1948 rice crop and the production of the 1949 crop. Supplies available for export from French Indo-China continued to be small, although some increase occurred in the Siamese crop. Japan made further progress in agricultural rehabilitation and in the rice collections.

Food crops in the southern hemisphere harvested during 1948–49 were more than average, particularly in Australia and Argentina; reports of serious drought in South Africa indicated probable less favourable results there. Exportable supplies of dairy products had increased somewhat in Australia and New Zealand, and there were also moderate increases in meat supplies from some southern hemisphere countries. Inadequate incentives, in terms of prices paid, apparently continued to be a drag on production in some areas, especially in Argentina, and late in 1949 the government announced somewhat higher prices for grains.

The food situation, both as to production and consumption, was excellent in North America in 1949, partly because of near record crop production but also because of an upturn in livestock and its products. Crops in the U.S. yielded 148% of prewar (as compared with 154% in 1948), and even livestock production was 133% of prewar. Canadian crops also were less than in 1948; that country began to search for wider markets for its exportable foods, even in the U.S., in the face of a cutback in contracts with the United Kingdom.

World Food Organization.—The United Nations Food and Agriculture organization (F.A.O.) continued to occupy the centre of the international agricultural stage during 1949. Its fifth annual conference of the 62 member countries was held in Washington, D.C., during Nov. and Dec. 1949. During the year, Norris E. Dodd of the U.S. continued as director general. Lord Boyd-Orr (*q.v.*), the former director general, was the 1949 recipient of the Nobel prize for peace. A decision was taken to move the permanent headquarters to Rome, Italy. Two other major matters were considered. As regards technica assistance on agricultural matters to those nations requesting uch help, the importance of providing technical advisors and xtension services were emphasized, with order of priority on roposed projects to give preference to measures likely to secure n early increase in production of food and other requirements f local populations. The other matter was the consideration of he report on world commodity problems, proposing an interational commodity clearing house, which would purchase surlus supplies of food in exporting countries and dispose of them mong under-supplied countries having inconvertible currency lifficulties. Instead, a Committee on Commodity Problems was rdered with recommendations looking toward an approach nvolving an individual commodity basis.

Other international food activities during 1949 were the ratiication of the International Wheat agreement which, it was hought, might be the forerunner of other commodity agreenents. However, at the year end it appeared that performance nder the agreement was hardly up to schedule.

Films of 1949.—*Battle for Bread* (March of Time, Forum Edition); *ood for Asia* (British Information Services).

(J. K. R.)

oot-and-Mouth Disease: *see* Veterinary Medicine.

ootball. Notre Dame, Oklahoma, California and Army were ranked as the four top college football teams of the Jnited States in 1949. They were the only ones playing a major chedule that finished with perfect records for the season.

Notre Dame completed its fourth consecutive schedule without a defeat. Since Frank Leahy resumed his post as head oach in 1946 after serving in the navy, it had won 36 games nd been tied twice, and for the third time in the four years he Fighting Irish were ranked as the No. 1 team of the nation.

Army, under Earl Blaik, enjoyed its fifth season without a oss in six years. It extended its undefeated sequence to 20 ames by defeating Navy 38–0 before Pres. Harry S. Truman nd a gathering of 102,000 in Philadelphia's Municipal stadium.

Oklahoma, which lost its opening game in 1948 and then won all the others, maintained its invincibility through ten more games in 1949. Its coach, Charles (Bud) Wilkinson, was voted the outstanding mentor of the season. California completed its second regular season in succession without a setback and its coach, Lynn Waldorf, placed second in the balloting for the outstanding coach of the year, as he did the year before.

Behind these four teams in the nation-wide poll of the Associated Press were ranked Rice, Ohio State, Michigan (the 1948 leader, whose 25-game winning streak was ended by Army), Minnesota, Louisiana State and the College of the Pacific. Kentucky, Cornell, Villanova, Maryland, Santa Clara, North Carolina, Tennessee, Princeton, Michigan State, Missouri and Baylor followed next in order.

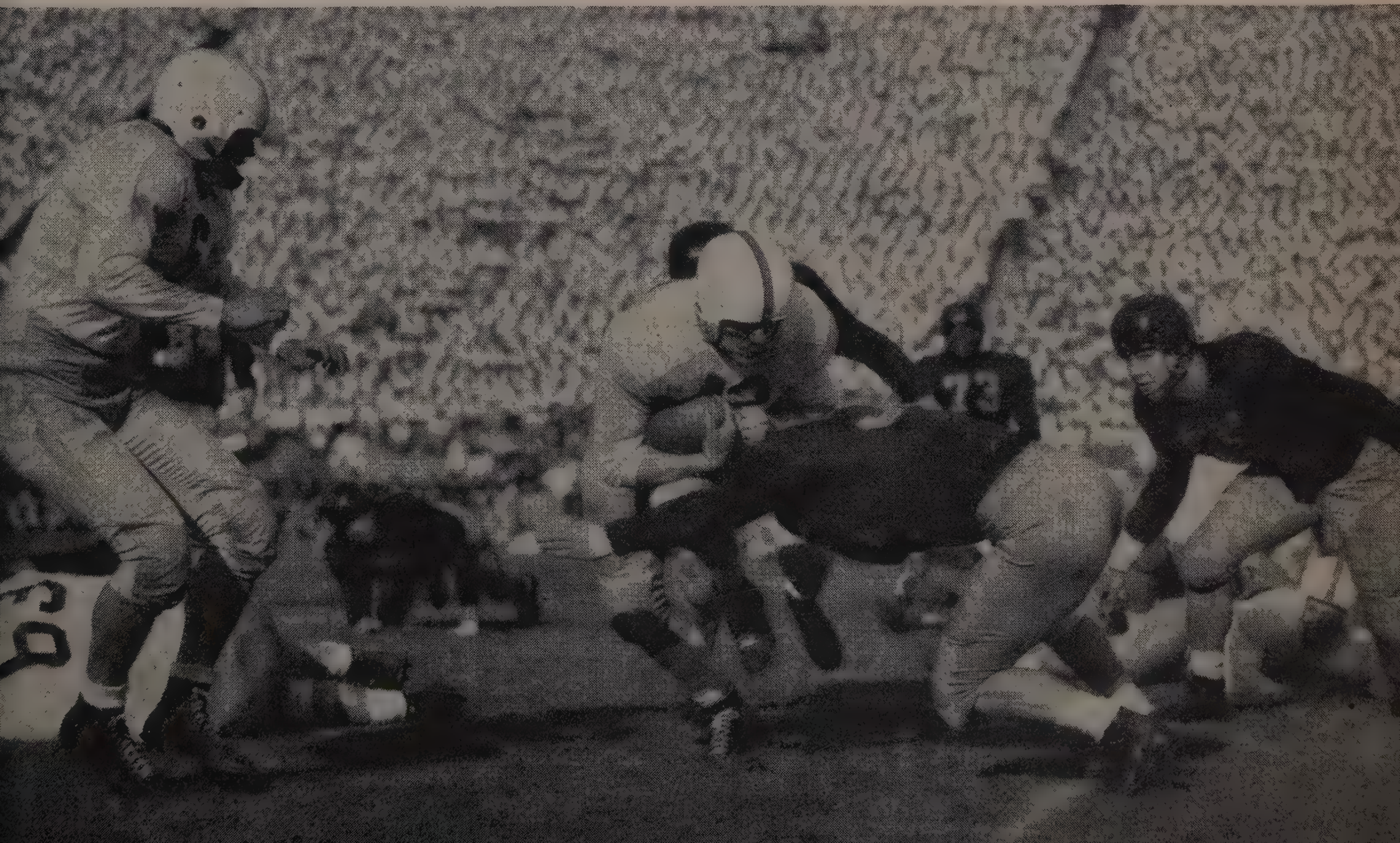
Michigan, Western conference champion in 1948 and 1947, shared the title with Ohio State. Oklahoma repeated as winner of the Big Seven crown. California, cochampion with Oregon in 1948, finished on top in the Pacific Coast conference. Rice was champion of the Southwestern conference, Tulane of the Southeastern and North Carolina of the Southern. Army was ranked as the No. 1 team of the east and was awarded the Lambert trophy while Cornell, beaten only by Dartmouth, retained the Ivy league title by defeating Pennsylvania. Princeton won the Big Three honours for the third successive year, the first time this had ever been accomplished.

California and Ohio State were named to play in the Rose Bowl at Pasadena, Calif., as the top teams in their conferences. Michigan was barred from consideration by the agreement that limits a Western conference team to playing once in three years in the postseason game. California and Ohio State, coached by Wesley Fesler, met in the Rose Bowl, Jan. 2, 1950, and Ohio State won by the score of 17–14.

In the Sugar Bowl at New Orleans, La., the contestants were Oklahoma and Louisiana State, which was defeated twice during the season but gained victories over three conference champions —Rice, North Carolina and Tulane. The Sugar Bowl game was won by Oklahoma, 35–0.

Rice played North Carolina in the Cotton Bowl at Dallas,

HUGH McELHENNY, University of Washington fullback, being downed by Paul Baldwin, halfback for the University of California, after a two-yard gain in the second quarter of the game played at Berkeley, Calif., Oct. 22, 1949



Tex., and the verdict went to Rice, 27–13. In the Orange Bowl at Miami, Fla., Kentucky and Santa Clara were the opponents and the latter won, 21–13.

Leon Hart, 255-lb. Notre Dame end, was voted the Heisman Memorial trophy as the outstanding player of the year, the second lineman in the 15-yr. history of the award to be honoured. He was chosen by a big margin over Charles Justice of North Carolina, Doak Walker of Southern Methodist (the 1948 winner), Arnold Galiffa of Army, Robert Williams of Notre Dame, Eddie Lebaron of College of the Pacific, Clayton Tonnemaker of Minnesota and Emil Sitko of Notre Dame. All of these were backs except Tonnemaker, a centre.

Hart, Tonnemaker, Galiffa and Sitko were unanimous choices on all of the widely recognized All-America teams. So also was Rod Franz, California guard, while Jim Williams, Rice end, Doak Walker and Wade Walker, Oklahoma tackle, were named on most of them.

Doak Walker and Justice, two of the greatest backs of 1948, were handicapped by injuries in 1949. Walker was unable to play in the final game against Notre Dame. In his absence, Kyle Rote turned in a remarkable performance, scoring three touchdowns and eclipsing all others on the field as Southern Methodist gave Notre Dame its only real scare of the year.

Playing before 75,000 in the Cotton Bowl stadium at Dallas, the Mustangs battled the 28-point favourite Fighting Irish tooth and nail from the start to finish. Trailing by 7–20, they threw the crowd into an uproar as they scored two touchdowns in rapid succession and tied the score. To win the game, Notre Dame had to march 57 yds. in the final quarter and then stop a 67-yd. advance by S.M.U. to the 4-yd. mark.

College football enjoyed its customary high favour while professional football was suffering a marked drop in attendance. Although there was a slight drop in the east and on the Pacific coast, attributed to the televising of games, the college figures for the country as a whole were even higher than in 1948. Michigan drew the almost incredible total of 563,500 spectators for six games in its enlarged stadium and 772,482 for nine games at home and away. Notre Dame continued to play to sellout crowds in almost every game. Pennsylvania, Army, Navy, Ohio State, Southern Methodist, Stanford and Tulane were other leaders in attendance.

A great deal of controversy was occasioned during the season over the use of the platoon system, which many of the leading teams used. The employment of separate offensive and defensive units was decried by some of the coaches and there was considerable criticism of it in the press. It was argued that teams with large squads had an unfair advantage in the ability to make wholesale substitutions against opponents who lacked the manpower to do so. It was ruining the game and was confusing to the spectators, opponents of the system argued. The majority of the coaches, however, appeared to be against any change in the rules that would restrict substitutions and to side with Earl Blaik of Army in his contention that the alternate use of offensive and defensive teams of rested players made for a safer, faster and finer game of football and permitted more men to participate.

There was no marked change in the pattern of the game, either offensively or defensively. The T formation continued to enjoy a big vogue but the single wing was still going strong and some of the most successful teams employed it. The forward pass was used extensively, but not nearly as much as in professional football, in which the running attack was secondary to the pass with most teams.

Professional Football.—The four-year war between the National league and the All-America conference came to a sudden end shortly before the Philadelphia Eagles and the Cleveland Browns were again established as the champions of the two circuits. Since the conference started operations in 1946, to challenge the older organization for the public's support, the two leagues had gone their separate ways, refusing to get together on schedules and a common draft. As a consequence of their staging rival attractions in New York and Chicago and their attempts to outbid each other for the services of college stars at ruinous figures, professional football became more and more a losing proposition for all but a few clubs. It was obvious that an agreement would have to be reached soon or it would be the end of both leagues.

The agreement was reached so secretly that the public was taken by surprise. It was effected at a series of conferences in Philadelphia, Pa., between Bert Bell, commissioner of the National Football league, and J. Arthur Friedlund, representing the conference.

The settlement called for the formation of a new 13-club league, to be known as the National-American Football league. All of the ten clubs operating in the National league were to be included and three from the conference—the Cleveland Browns, the San Francisco Forty-Niners and the Baltimore Colts.

The New York Yankees were purchased by Ted Collins, owner of the New York Bulldogs of the National league. The Buffalo Bills, the Los Angeles Dons and the Chicago Hornets, the other teams in the conference, were to go out of business. The new league was to be divided into divisions, National and American, and the winners in each were to meet in a play-off for the world championship, comparable to the world series in baseball.

The fact that attendance fell off so much in 1949 at the professional games was probably one reason why the agreement was reached. Most of the clubs saw their patronage decline sharply. Partly because of bad weather, slim crowds saw the play-offs for the championships in the two leagues. The Philadelphia Eagles defeated the Los Angeles Rams in rain and mud before 22,245 fans in Los Angeles, Calif., 14–0. At Cleveland, O., 22,550 persons saw the Browns win from the San Francisco Forty-Niners in the mud by 21–7.

The Browns closed down their operations in the All-America conference with a remarkable record. They had won the championship all four years, the only professional team in organized football to carry off four consecutive titles, and they had won 52 games (including four championship play-offs), lost four and been tied three times.

Canada.—The Grey cup, emblematic of the dominion football championship, returned to Montreal for the first time in 18 yr. as the Alouettes of that city defeated the Calgary Stampeders, 28–15 on a snow-patched field before a capacity crowd of 20,100 at Varsity stadium in Toronto.

The Alouettes, organized in 1945 to represent the city of Montreal in the Big Four Football union, defeated the Ottawa Rough Riders for the Big Four title. They then crushed the Hamilton Tigers, winners in the Ontario Football union, 40–0 in the All-Eastern final to qualify for the East-West play-off. The Calgary Stampeders had earned the right to represent the west by defeating the Regina Rough Riders.

The University of Western Ontario defeated McGill university, 12–9, to win the championship of the Intercollegiate Rugby Football union. McGill was the surprise team among the colleges, which are not permitted to compete for the Grey cup.

The season witnessed a healthy growth in interest in Canadian football and the increasing influence of American football on the dominion game, as reflected in the wide adoption of the T formation and the number of players from across the border who excelled in the big contests. The fear was expressed in ome official circles that this influence was becoming too owerful.

The Big Four raised the number of United States players ermitted each member team from five to seven, and of the 13 layers selected by writers and coaches on the Big Four all-star eam no less than 10 were from the United States. However, he Jeff Russell Memorial trophy, awarded annually to the layer who best combines sportsmanship with effective play, ent to Canadian-born Royal Copeland, halfback on the oronto Argos.

Resulting in part from the introduction of football clinics in he off season and the improvement in coaching methods, the andard of play in junior and high school ranks was higher hroughout the dominion. (A. DA.)

Great Britain.—*Rugby Union.*—For the second year in sucession Ireland in 1949 carried off the international honours. ext in the championship table came England, France and Scotnd, with two wins out of four games, and Wales figured at he bottom.

Lancashire won the county championship for the third time unning, Gloucestershire once again being runner-up. The Oxford . Cambridge match in Dec. 1949 was won by Oxford, 3–0.

Rugby League.—In international Rugby league football, a oung Australian side visited the United Kingdom in 1948 for he first half of the season, the last test being played in Jan. 949. The visitors lost all three matches, and except in the rst match, which they lost by 21 points to 23 at Leeds, they ere outplayed as well. The home international championship played between England, Wales and France, each country laying the other two home and away. For 1948–49 France eaded the list, losing only to England at Bordeaux.

At Wembley, the challenge cup finalists were Bradford Northrn and Halifax, and the former won by 3 goals and 2 tries to il. Warrington, the leaders of the league table, were expected o win the league club championship. But they lost to Huddersield 12 points to 13.

Association.—In the game between England and Scotland at Vembley, Scotland won by 3–1. Scotland were undisputed hampions, for they won all three matches, beating Wales at ardiff 3–1 and Ireland at Glasgow 3–2.

The Football association cup final at Wembley was played etween Wolverhampton Wanderers and Leicester City, the ormer winning 3–1. The Scottish cup was won by Glasgow angers who beat Clyde 4–1. The English league championship as won by Portsmouth. The Scottish league championship was on by Glasgow Rangers with Dundee as runners-up.

The university match was one of the best ever played between xford and Cambridge. In the end Oxford won by five goals to our. In the Football association amateur cup final, played at Vembley for the first time, Bromley beat Romford 1–0.

FILMS OF 1949.—*Basic Kicking Techniques* (Audio Film Center). (D. R. G.)

ord Foundation: *see* SOCIETIES AND ASSOCIATIONS.

oreign Exchange: *see* EXCHANGE CONTROL AND EXCHANGE ATES.

oreign Investments.

United States Investments Abroad.—The flow of United tates capital to foreign countries that was resumed at the end f World War II continued in diminished volume during 1949, nd contributed to raise the value of United States investments foreign countries (and international organizations) to aproximately $31,700,000,000 on Sept. 30, 1949—an increase of out $200,000,000 over Dec. 31, 1948. Unlike previous years, hen loans by the United States government dominated, the bulk of new foreign investments accounting for this increase was made by the private section of the economy whose investments, including the reinvested earnings of subsidiaries in foreign countries, accounted for about $650,000,000 of the $1,200,000,000 of government and private capital investments abroad during this period. However, the effect of new investments on the total value of United States investments abroad was offset by the devaluation of leading foreign currencies during Sept. 1949 which may have had the effect of reducing the value of United States investments abroad by roughly $750,000,000 to $1,000,000,000.

Estimates of the balance of international payments of the United States prepared by the United States department of commerce indicated that direct investments were the major vehicle for private capital exports to other countries during 1949 while the United States remained dormant as a capital market for portfolio loans to foreigners. Direct investments accounted for $370,000,000 of estimated private capital outflows during the first nine months of 1949 together with an additional $370,000,000 of reinvested earnings, while the only foreign borrowing in the United States of any consequence involved a $100,000,000 government of Canada bond issue.

From the published data it appeared that the outflow of United States direct investment capital in 1949 would fall below the record of almost $800,000,000 set during 1948.

Although the volume of United States direct investment capital exports was large during 1949 and earlier postwar years, it played a relatively small part in assisting foreigners to pay for their over-all purchases from the United States or to develop their own productive facilities.

Early in 1949 interest in United States private foreign investments was stimulated by the fourth point of the inaugural address of the president of the United States, Harry S. Truman, who called for increased U.S. technical assistance and productive investments in underdeveloped areas. The primary purpose of this program was to help the people of economically underdeveloped areas, who comprise a large part of the world's population, in their efforts to develop their human and natural resources, to increase their productive capacities and to raise their standards of living. During 1949, and earlier, the progress of these countries was hindered by deficiencies in technical skills and in capital for essential productive investments. It was held that United States assistance in meeting these deficiencies would have both direct and indirect benefits not only for the people of the underdeveloped nations but for the United States as well.

The per capita consumption of products from the United States by underdeveloped countries was low not because of a lack of desire of United States products or because of availability of local substitutes, but because these countries lacked the capacity to produce commodities for export. This seriously limited their ability to import the products of other countries.

Statistically, the need for capital over the next four years by the world as a whole—excluding the United States and Canada, was placed at $43,000,000,000 a year, according to a report on international investment and financing facilities by the Food and Agriculture Organization of the United Nations (F.A.O.).

This figure was based on data taken from national development plans, aspirations expressed by various governments and estimates for a number of countries prepared by the F.A.O., and included $5,000,000,000 for agriculture. About $8,500,000,000 would have to be obtained from foreign sources. For non-European countries the figures would be about $7,200,000,000 for total capital needs, including $1,400,000,000 for agriculture and $3,000,000,000 from foreign sources on the average during each of the next four years.

The report also indicated that while aid from foreign sources

Table I—*Estimated Value of U. S. Investments Abroad, by Area*

(In millions of dollars; direct investments at book value, other investments at market or stated value)

Type of investment	Dec. 31 1948 Total	ERP countries	ERP dependencies	Other Europe	Canada	American republics	Other foreign countries	International institutions	Sept. 30, 1949, total
Total	31,483	12,021	613	1,113	6,117	5,790	2,181	3,629	31,700
Private	18,412	3,942	539	676	6,109	5,367	1,538	241	18,100
Long-term	16,762	3,431	521	586	5,962	4,677	1,344	241	16,625
Direct	11,318	2,008	498	322	3,231	4,168	1,091	—	11,800
Foreign dollar bonds	1,673	60	—	26	1,096	150	100	241	1,775
Securities payable in local currencies	2,231	588	8	46	1,408	104	77	—	1,800
Other	1,540	775	15	192	227	255	76	—	1,250
Short-term	1,650	511	18	90	147	690	194	—	1,475
Deposits	383	175	6	38	86	47	31	—	400
Other	1,267	336	12	52	61	643	163	—	1,075
United States government	13,052	8,079	74	437	8	423	643	3,388	13,600*
Long-term	12,903	8,050	65	437	7	377	579	3,388	13,350
Short-term	149	29	9	†	1	46	64	—	250

Note: No allowance has been made for the value of private direct investments abroad damaged during the war, written off or expropriated without compensation. Holdings of portfolio securities of former enemy countries, or countries where no realistic valuation is obtainable, have been excluded. Government long-term investments exclude loans to foreigners by commercial banks at the risk of the Export-Import bank. These have been classified as private capital in this table, which includes only the outstanding amount of such loans rather than authorized amounts. Government expenditures on productive agricultural facilities are classified as government investments in this table.

*Includes investments in the International Monetary fund and the International Bank for Reconstruction and Development amounting to $3,386,000,000. Although the entire United States investment in international institutions, including the subscription of $687, 500,000 in gold to the International Monetary fund, is included in United States investments abroad, the gold held by international institutions or others in the United States is not included as a foreign investment in the United States.

†Less than $500,000.

Source: Data prepared by the U.S. Departments of Commerce and Treasury and individuals.

since the war, both expended and committed, had exceeded the $8,500,000,000 per annum deemed necessary for the future, public funds had constituted over 90% of total international investments, but apparently were beginning to decline. In the same period, savings in underdeveloped countries were estimated at less than half the rate necessary to raise the desired domestic capital and service on the foreign debt.

While there was general agreement on the desirability of private capital investments, many U.S. business organizations were opposed to the portion of the Point 4 program that proposed United States government guarantees of new private investments abroad as a means of stimulating investments.

The volume of capital outflows outside the petroleum industry was not impressive during most of 1949 and in previous postwar years. In the early postwar years, general shortages of goods in the United States probably hindered the export of capital. However, other factors probably exerted an even greater restraining influence on capital outflows. Political and economic factors in large areas of the world were not favourable to the making of new investments. In Europe and in most of Asia political conditions were unstable and in most of the world balance-of-payments difficulties increased the problem of dollar-exchange availability. Investors feared that severe exchange restrictions on the transfer of earnings and capital would generally be imposed in the future, although for the most part there was sufficient dollar-exchange available after the war to accommodate the transfer of income to the United States. Various restrictions imposed by foreign governments also had a bearing on decisions regarding new foreign investments, and for public utilities there was also the fear of expropriation.

During 1949 the president requested congress to authorize an experimental program for the guaranty of newly invested private capital in undeveloped countries. The capital would have to contribute to the economic development of such areas and would be guaranteed against risks related to foreign investments, other than ordinary business risks. Outstanding among such risks proposed for a program of government guarantees were those of nonconvertibility of returns derived from the investment, including capital, and loss through seizure, confiscation or expropriation, without prompt, adequate and effective compensation. Ordinary business risks, such as those encountered by a business operating in the United States were not included in the proposed program.

Treaties of friendship, commerce and navigation between the United States and a large number of other countries were under negotiation during 1949. These related to more comprehensive provisions for the protection of investments than did earlier treaties. The treaties were to be of a long-term nature and the United States proposed that they provide the basic legal climate in which citizens and enterprises of one country may do business in the other.

The proposed treaty commitments sought to secure the following for United States investors: (1) Fair treatment no less favourable than accorded to nationals of the foreign country or of a third country; (2) reasonable freedom to operate, control and manage enterprises; (3) the right to withdraw earnings and reasonable amounts of principal of the investment; (4) conditions under which exchange restrictions might be imposed, and protection of the interests of the investor with regard to such restrictions; (5) assurances regarding tax discrimination against foreign investors; and (6) commitment of effective compensation in the event of expropriation of an investor's property.

Foreign Investments in the United States.—The value of foreign investments in the United States was practically unchanged during the first nine months of 1949 and stood at approximately $17,000,000,000 at the end of September. The general ability of citizens of other countries to retain U.S. assets in the face of continuing balance-of-payments deficits with the United States was an evidence of the success of the European Recovery program (ERP) in rendering aid to foreign countries. The effectiveness of this aid had been apparent in an increase in foreign short-term balances in the United States during the last half of 1948 and the first quarter of 1949, following the serious decline that began with the termination of lend-lease aid in 1945. However, banking and other short-term claims of ERP countries on the United States again declined in the second quarter of 1949 as a financial crisis developed in the United Kingdom. Following the devaluation of the pound sterling and the currencies of other leading countries in mid-September there was some evidence of a recovery in short-term claims on the United States.

For countries with relatively low reserves, losses of gold and foreign exchange might have serious consequences, although it should be noted that such losses are not causal but are the consequence of imbalance in the exchange of goods, services and aid with other countries. According to preliminary figures of the U.S. department of commerce, the devaluation of the British pound in Sept. 1949 was preceded by losses of short-term banking claims on the United States and sales of gold to that country of about $29,000,000 in the first quarter and $269,000,000 in the second quarter of the year. During the third quarter, the loss amounted to $237,000,000. At the close of September, British short-term banking claims on the United States were about $439,000,000 as compared with $546,000,000 nine months earlier.

The decline in total foreign short-term banking claims on the United States in this period aggregated $165,000,000. Aside from the United Kingdom, the declines were largest for China ($92,000,000), the Republic of the Philippines ($140,000,000) and Italy ($48,000,000). However, the Italian loss of about $100,000,000 in the third quarter of the year merely reflected the shift of that sum to gold, purchased from the U.S. treasury.

Increases were largest for the following countries: Canada ($52,000,000), Japan ($80,000,000) and the Netherlands ($43,000,000). The Canadian acquisition of United States funds reflected the flotation of $100,000,000 of Dominion of Canada bonds in the United States during the third quarter of the year.

Table II.—*Estimated Value of Foreign Investments in the United States, by Area*
(In millions of dollars; direct investments at book value, other investments at market or stated value)

	End of 1948								
Type of investment	Total	ERP countries	ERP dependencies	Other Europe	Canada	American republics	Other foreign countries	International institutions	Sept. 30, 1949, total
Total*	16,865	7,419	375	324	2,312	2,183	1,621	1,950	16,885*
Private obligations	13,007	7,147	328	290	1,754	2,095	1,079	314	13,095
Long-term	7,336	4,632	185	112	1,420	725	262	—	7,580
Direct	2,854	1,906	18	25	695	139	71	—	2,960
Corporate stocks	2,500	1,491	63	11	511	321	103	—	2,580
Corporate bonds†	419	252	20	26	74	47	—	—	470
Other	1,563	983	84	50	140	218	88	—	1,565
Short-term	5,671	2,515	143	178	334	1,370	817	314	5,520
Deposits	5,182	2,262	135	155	299	1,268	749	314	5,060
Other	489	253	8	23	35	102	68	—	460
U.S. government obligations	3,858	272	47	34	558	88	542	1,636	3,790
Long-term	394	117	36	11	58	41	49	82	455
Short-term‡	3,464	155	11	23	500	47	493	1,554	3,335

*Does not include gold held in the United States for foreign official account, including international institutions, amounting to $3,777,700,000 on Dec. 31, 1948, and to $4,060,900,000 on Sept. 30, 1949.

†Includes foreign holdings of state and municipal bonds estimated at $75,000,000.

‡Includes an estimated $680,000,000 of United States currency held abroad at the end of 1948 and $750,000,000 on Sept. 30, 1949, not allocable by area.

Source: Data prepared by the U.S. Departments of Commerce and the Treasury and individuals.

Gold and dollar reserves of Great Britain had increased by about £20,000,000 sterling in the last 12 days of September according to the chancellor of the exchequer. Later in 1949 the chancellor stated that United Kingdom reserves had continued to move upward since the devaluation of sterling. In some financial quarters it was also apparently expected that on the basis of the reduced British dollar import program and of Economic Cooperation administration (ECA) aid as then approved by the United States congress there was no reason to expect, in the period up to June 1950, that British reserves would fall below their end of Sept. 1949 position.

Foreign countries and international organizations made net purchases of approximately $86,000,000 of the long-term securities of United States corporations and bonds of the United States government during the first nine months of 1949. Such acquisitions were in contrast to the general experience of earlier years when countries in Europe and Asia sold substantial holdings of United States stocks and bonds largely as a means of meeting their balance-of-payments deficits on current account.

If changes in the holdings of U.S. securities by the International Bank for Reconstruction and Development were excluded from foreign acquisitions during the first three quarters of 1949 it appeared that over-all purchases and sales by foreign countries of U.S. securities were in approximate balance, although the experience varied from country to country. Net purchases by the International bank in this period were securities issued by the United States government.

Countries participating in the European Recovery program purchased about $35,000,000 of stocks and bonds according to data published by the U.S. treasury department, although if trading for Swiss account was eliminated, transactions for other ERP countries were about in balance during the first nine months of 1949. Since it was known that several ERP countries were in great need of dollars during this period, particularly in the second and third quarters, the absence of large liquidations of United States securities suggested that certain countries probably had about exhausted their holdings of readily marketable securities. This may have been the case for France and the Netherlands. These two countries, as well as others, had been aided earlier by the U.S. treasury in identifying the United States assets of their nationals which had not been reported to them, and had presumably liquidated such security holdings that had been revealed by the treasury. Nationals of the United Kingdom had sizable holdings of securities, although the choice of these were still pledged with the Reconstruction Finance corporation as collateral for a loan granted to England in 1941 and were therefore not available for sale.

Of the countries cooperating in the European Recovery program, Switzerland engaged in the largest volume of transactions of United States stocks and bonds during the first nine months of 1949 and on balance purchased about $36,000,000. The acquisition reflected the relatively sound economic position of that country strengthened by its wartime neutrality, although a portion of Swiss security purchases presumably were for residents of other countries for whom Switzerland acts as a banking centre.

United Kingdom purchases in this period of $12,000,000 of securities were probably for the account of non-Britishers since the exchange control system of that country would presumably not have permitted the use of scarce dollars for portfolio investments. The Netherlands sold about $15,000,000 of United States stocks and bonds, continuing the program begun in 1948 of liquidating its nationals' dollar holdings. In that year $78,000,000 of Netherlands assets were sold. France had followed a similar program during 1948, liquidating about $72,000,000 of U.S. securities, although in 1949 changes in French holdings of United States securities were negligible through September and appeared to consist of switching from holdings of shares to investments in bonds. Italy and Belgium made small security purchases in the latter period.

As a result of transactions and small rises in the quoted prices of stocks and bonds, the value of foreign-held United States portfolio securities increased by about $192,000,000 during the first three quarters of 1949. About $106,000,000 of the rise reflected security price increases and the balance, the previously mentioned combined net purchases of foreign countries and international organizations.

Direct-investment enterprises (United States branches of foreign companies, and United States-incorporated companies, 25% or more of whose voting shares were held abroad) apparently continued to retain a large portion of their United States earnings for expansion and other purposes in the United States, thus adding to the value of foreign investments in such companies. In 1948 the foreign equity in the earnings of United States-incorporated subsidiaries was approximately $150,000,000. About $57,000,000 of this income was paid out as dividends to foreigners.

Among the uses announced in 1949 for the reinvested funds of direct-investment enterprises were the following plans of a leading detergent-, soap- and shortening-producing company whose control was in British hands. The company and its affiliates proposed to spend $65,000,000–$70,000,000 for plant expansion, including new products, additional research facilities and a 20-story office building to centralize and house its administrative functions.

The latest report available during 1949 on the activities of the Office of Alien Property of the United States related to the fiscal year ended June 30, 1948. On the latter date, the office held title to former enemy property in the United States with a value of $340,000,000 and held another $3,000,000 of assets in safekeeping or under supervision. In addition, the annual report of the organization stated that about $61,000,000 of vestible property had not been vested (seized) as of June 30, 1948.

From its inception in March 1942 to that date, the office and its predecessor organization had received about $125,000,000 from the sale and liquidation of business and personal property it had taken from enemy aliens.

During this period the property of nationals of Germany, Japan, Italy, Hungary, Rumania, Bulgaria and of enemy-occupied countries had been vested. During 1948 the Office of Alien Property considered that its primary responsibility was the elimination of German and Japanese interests in property in the United States, since treaties of peace with Italy, Hungary, Rumania and Bulgaria in the year before had provided for the return of assets seized in the United States after the satisfaction of certain claims. An agreement was reached in that year with Italy for the return of vested property, involving a certification procedure for Italian claims to such assets. In addition, former Italian ships were returned to the Italian government and replacements made for Italian ships seized by the United States government and thereafter lost while being employed in the war effort. No agreements were concluded between the United States and Bulgaria, Hungary or Rumania with respect to the disposition of property taken from nationals of those countries. In addition to property vested by the Office of Alien Property, there were certain assets such as bank deposits belonging to the governments and nationals of those countries which remained blocked. (*See* also EUROPEAN RECOVERY PROGRAM; EXCHANGE CONTROL AND EXCHANGE RATES; EXPORT-IMPORT BANK OF WASHINGTON; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND.) (M. AB.)

Foreign Loans, U.S.: *see* UNITED STATES: *Foreign Credits of the United States Government.*

Foreign Ministers' Conferences: *see* COUNCIL OF FOREIGN MINISTERS.

Foreign Missions: *see* MISSIONS, FOREIGN (RELIGIOUS).

Foreign Trade: *see* INTERNATIONAL TRADE.

Forests.

The U.S. forest service in 1949 issued an over-all summary and analysis of its postwar reappraisal of the forest situation in the United States. Highlights of its report were:

The potential productivity of the nation's forest land is enough eventually to fill domestic needs generously, provide for national emergencies and help in some measure toward meeting the needs of a world undersupplied with timber. Approximately one-third the total land area is forest land. About 461,000,000 ac. are suitable and available for growing merchantable timber.

The supply of saw timber is steadily shrinking. More timber is cut or destroyed each year than is replaced by growth. Timber quality is deteriorating; much of the annual drain is in the better saw timber, particularly softwoods, whereas much of the growth is in small, low-grade trees and inferior hardwoods.

The nation must depend mainly on private forest lands for its timber supplies. Three-fourths of the commercial forest land is privately owned, including generally the best growing sites and most accessible locations. But 64% of all cutting on private lands was in 1949 still poor or destructive, and only 8% was up to really good forestry standards.

To meet the nation's prospective future needs would require increasing the annual growth of all timber by one-half and doubling the existing saw timber growth rate. The forest service recommended: (1) a system of public regulation of cutting that would stop forest destruction and keep forest lands reasonably productive; (2) expansion and intensified management of public forests; (3) increased public aids and services to private owners, including intensified protection against fires and destructive insects and diseases, increased aid in reforestation, a federally sponsored credit system to provide long-term loans suited to the needs of private forest operators, a federally sponsored insurance system to reduce the risks inherent in forestry enterprises, increased technical advice and assistance for small forest owners and expanded research in forestry and wood utilization.

A 1,250,000-ac. forest in the state of Washington was dedicated as a living memorial to Gifford Pinchot, pioneer American conservationist and first chief of the U.S. forest service. Formerly known as the Columbia National forest, it was renamed Gifford Pinchot National forest by proclamation of Pres. Harry S. Truman, June 15, 1949. Managed for sustained yield, its timber growth was estimated to be sufficient for an annual yield of 200,000,000 bd.ft. in perpetuity.

Fires burned thousands of acres of forest and watershed lands in the western states during the late summer months of 1949. The forest service reported a total of 7,657 fires in western national forests during the first nine months of the year, compared with 4,031 in the same period of 1948.

The Anderson-Mansfield act, passed by the U.S. congress in 1949, authorized an accelerated program of reforestation and revegetation of forest and range lands in the national forests. The act provided for a 15-year program, with appropriations for reforestation authorized in progressively increasing amounts, from $3,000,000 for fiscal year 1951 to $10,000,000 for 1955 and a like amount each year thereafter through 1965. For range revegetation, appropriations were authorized beginning with $1,500,000 for 1951 and increasing to $3,000,000 for 1955 through 1965.

BIBLIOGRAPHY.—"Trees," U.S. Department of Agriculture, *1949 Yearbook;* "Forest and National Prosperity," U.S. Department of Agriculture *Misc. Pub. 668;* Egon Glesinger, *The Coming Age of Wood;* Herman H. Chapman and Walter H. Meyer, *Forest Valuation.*

International Conferences.—A large group of American foresters attended the Third World Forestry congress in Helsinki, Finland, during July 1949. In March an International Forestry and Timber Utilization conference of countries in Asia and the far east was held at Mysore, India. The United Nations Scientific Conference on the Conservation and Utilization of Resources, held at Lake Success, N.Y., Aug. 17 to Sept. 6, was one of the largest international meetings of natural resource technicians ever held. The technicians exchanged information at section meetings on forests, water, minerals, fuel and energy, land, wildlife and fish. Concurrently, a meeting of the International Union for the Protection of Nature was held at Lake Success. Resolutions adopted included recommendations for improved educational programs in conservation and for better protection of species threatened with extermination.

(C. E. R.)

Canada.—Although natural resources come under provincial jurisdiction, the federal government passed the Canada Forestry act on Nov. 30, 1949. The new law provided for establishment of forest experimental areas and laboratories, gave the federal government power to support any province or forest owner in protecting and developing forest resources and enabled the government to assist industries with economic studies on forest resources. Federal authorities were active in other forestry research: by girdling pulpwood size trees in the spring and filling the ring with an arsenic mixture, scientists proved that bark peeling is easy during flyless September, and that the wood is lighter and can be shipped more cheaply; the Sault Ste. Marie forest-insect laboratory stepped up its insect-killing activity under the leadership of Gernor Bergold, world authority on viruses; a new category of civil servants, known as "insect rangers," was organized as a further means of controlling forest pests.

There was much provincial forest activity during the year

Assisted by a $120,000 grant from the British Columbia Loggers' association, the west coast provincial university turned a 9,600-ac. wooded wilderness near Haney into a forestry college; British Columbia's 1949 tree planting included 10,000,000 fir and cedar saplings in coastal areas; Ontario set 18%–25% forest cover in southern agricultural areas as its reforestation target, continued its world-wide search for a strain of white pine resistant to blister rust and planned rigid timber-management in the 170,000-sq.mi. block where forest stocktaking was nearly completed; New Brunswick began a complete forest survey to put all timber operations under sustained-yield management after the pattern worked out by British Columbia.

According to the annual Canadian Forestry association survey, 6,390 fires during 1949 destroyed 1,500,000 ac. of forest with a potential wood and labour loss of $50,000,000. The 1949 losses created a ten-year average annual loss of about 2,000,000 ac. To help forest industries carry some of this loss, the first Limitholders Mutual Insurance company was established to provide mutual insurance on standing timber in New Brunswick, Quebec and Ontario.

BIBLIOGRAPHY.—Department of Mines and Resources, *Forest Conservation* (1949); Dominion Forest Service, *Native Trees of Canada*, new ed. (1949). (C. Cy.)

Great Britain.—A national census of the forests and woodlands of Great Britain was completed during 1949. Information which then became available showed the small area existing of productive woodlands in Great Britain compared with other European countries and also the great devastation caused by wartime fellings. Only 5% of the land surface of Great Britain was classified as forest land, and this consisted of nearly 3,000,000 ac. of privately owned woodlands and 500,000 ac. of state forests. More than one-third of this total woodland and forest area was unproductive, having been clear-felled during the two world war periods and not yet replanted.

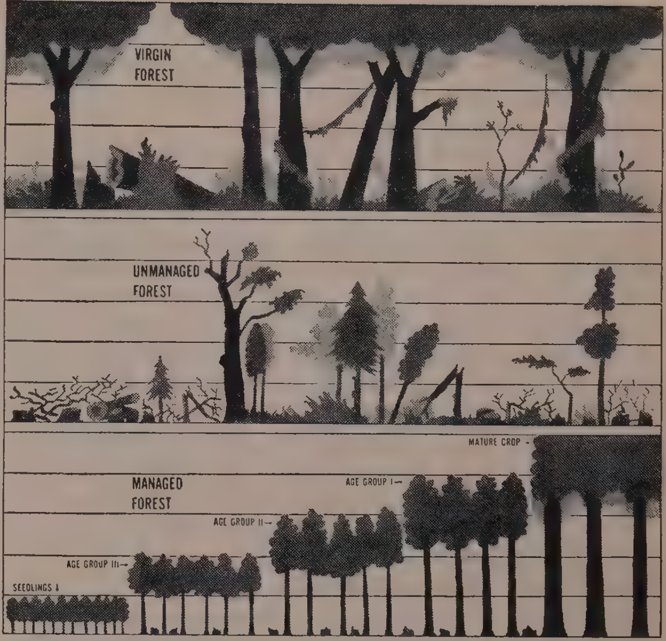
The various legislative enactments made to remedy this deplorable state of British forestry did not yet show much effect. The ambitious program of state afforestation, to bring the total area of forests up to 5,000,000 ac. at the end of 50 yr., had begun to give important results, and the annual target figures were almost reached again in 1949, but in the great effort to get large areas planted it was considered by some forestry experts that insufficient attention had been paid to the best ecological relation between the species of trees planted and the appropriate sites. The grant of financial assistance to private owners, under certain conditions, known as the "dedication" scheme, made little progress, and a small increase in the planting grant per acre and new supplementary grants for the thinning of plantations were made during the year to stimulate dedication and to encourage private forestry.

Because of the shortage of imported timber, excessive fellings in home woodlands continued after World War II, and the existing controls had to be tightened by a considerable reduction on the amounts of timber licensed.

The chief subjects of forestry research were the afforestation of peat and heath moorlands, the maintenance of fertility in nurseries and the study of the numerous varieties and races of poplars.

British Commonwealth of Nations.—In the commonwealth the heavy postwar demand for timber intensified the search for new sources of commercially useful timber; and formerly inaccessible areas were opened by modern mechanical methods of logging and the construction of extraction roads.

In British Guiana and in west Africa important projects were made for more extensive use of the forests, and new sawmills and plywood factories were placed under construction. In east Africa some of the plantations formed before World War II began to yield their first crops of sawn timber. The construction of a pulp mill was put into effect in Basutoland, and a wattle bark factory in Tanganyika.



CHARTS from Egon Glesinger's *Coming Age of Wood*, published in 1949. It was Glesinger's thesis that by treating the forest as a "mine" instead of a "crop," man has been overly wasteful of one of his basic raw materials

In Malaya the unsettled state of the country hindered forestry progress, but an important development was the compilation by the forest department of new timber grading rules. These rules, based on the ultimate commercial uses of the various grades of timber, created much discussion among foresters, timber importers and sawmillers, as the principles involved might be of great assistance in the grading and marketing of the lesser known species of tropical hardwoods not only in Malaya but in other parts of the commonwealth.

One of the chief developments in the fields of forest utilization during the year was in the uses of wood waste products, from both sawmills and paper mills and also from forest waste in the form of treetops, branch-wood and bark. In Canada and in Scandinavia new fibreboard plants were constructed where sawmill waste was treated chemically and mechanically, the finished product being obtained by pressure at a very high temperature.

In Australia there was a great increase in the use of eucalypt hardwoods for paper manufacture, and the year 1949 saw the establishment of new pulp mills and a steady increase in the Australian output of high quality paper of all grades.

Europe.—In European countries the disastrous fire in the pine forests of the Landes in southwest France was one of the most important events of the year. More than 360,000 ac. of valuable forests were destroyed. The pine forests of the Landes are the greatest source of resin and turpentine in Europe, and the economic loss to France of such a large part of the forests was all the more serious because of the great fires in the same area in 1944 and 1945.

In Germany and in Austria much progress was made in the regeneration of the forests overfelled during World War II and the postwar years, both by methods of natural regeneration and by the establishment of large nurseries for forest seedlings and transplants.

In Belgium the afforestation of the Campines and other areas of poor soils continued, and a new research station was opened for the cultivation and study of hybrids of poplars.

A parasitic disease known as the Chestnut blight (*Endothia* *parasitica*) caused considerable damage and economic loss in Italy, and to a less extent in Portugal and parts of Spain. Direct measures to cure or prevent the disease were not effective, and research was continued to find varieties of chestnut species resistant to the parasite.

FILMS OF 1949.—*Forest Conservation; The Forest Grows; The Forest Produces* (Encyclopædia Britannica Films Inc.); *Use of Forests* (Coronet Instructional Films). (A. H. LD.)

Formosa

(TAIWAN or T'AI-WAN). Formosa is a large island in the western Pacific, separated from China to the west by the Straits of Formosa and from the Philippines to the south by the Bashi and Balingtang channels. Area: 14,589 sq.mi., including Pescadores and neighbouring islands. Pop. (1949 est.): 7,000,000, including Chinese Nationalist troops and refugees from the mainland.

The capital is Taipei (formerly Taihoku) (326,407 in 1940); other large cities include Kao-hsiung (formerly Takao) (152,265), Tainan (142,133) and Chi-lung (formerly Keelung or Kiirun) (100,511). Principal religions are Buddhism, Confucianism and Taoism.

History.—As a result of the successful advances of Chinese Communist forces on the mainland, during 1949 Formosa was converted into a Chinese Nationalist military stronghold. Wei Tao-ming was replaced as governor in Dec. 1948 by General Chen Cheng, former chief of staff of Nationalist forces in Manchuria. On Dec. 8, 1949, the capital of the Nationalist government was moved to Taipei, Formosa's capital. General Chen was removed as governor on Dec. 15, 1949, and appointed military commander of Formosa. K. C. Wu, former mayor of Shanghai, was appointed governor. At the end of 1949, Formosa was one of the two territories remaining in the control of the Nationalist government, the other being Hainan Island.

Education.—In 1941 there were 1,000 primary schools with 12,076 teachers and 740,693 students; 6 normal schools with 225 teachers and 2,507 students; 4 colleges with 236 teachers and 1,385 students; and 1 university with 345 students.

Finance.—Upon taking over the administration of the island, the Chinese issued a special currency for Formosa, the Taiwan dollar, based on the former Japanese yen notes. In 1949 a new currency, the new Taiwan yuan, was issued and the Taiwan dollar was eliminated. In Nov. 1949 the total note issue was 144,000,000 new Taiwan yuan. It was reported that the gold and silver of the Nationalist government's treasury was sent to Formosa during 1949.

Transportation and Communications.—In 1946 there were 981 mi. of government railroads, more than 1,500 mi. of private railroads and 500 mi. of tramways; there were 10,000 mi. of roads of all types, of which 2,200 mi. were main highways. In 1939 there were 220 telegraph offices, 195 post offices and 123 telephone exchanges.

Agriculture.—The gradual rehabilitation of agriculture since the close of World War II resulted in large increases in agricultural production in 1948–49 although output was still generally below prewar levels. The estimated 1948–49 agricultural production in short tons amounted to: rice, 1,320,000; sugar, 550,000; tea, 10,560; pineapples, 17,600; bananas, 85,800; oranges, 32,450; tobacco, 3,700; jute, 14,850; sisal, 2,200. The cultivated area in 1949 was estimated at 2,055,000 ac. or 23% of the total land area.

Industry.—In 1949 the firm hydroelectric capacity amounted to 130,000 kw. Industrial production in 1948 in short tons (unless otherwise stated) amounted to: coal, 1,815,000; salt, 396,000; copper, 990; aluminum, 2,750; cement, 258,900; refined sugar, 295,000; chemical fertilizers, 42,100; paper, 7,150; caustic soda, 5,280; hydrochloric acid, 3,410; bleaching powder, 3,080; cotton yarn, 884; cotton cloth, 4,480,000 yd.; gold, 12,200 troy oz.; crude petroleum, 36,000 bbl.; refined petroleum, 700,000 bbl.; electric power, 832,000,000 kw.hr.

Trade.—Formosa's chief exports in 1948 were rice, sugar, coal, salt, cement, tea and fruits. Chief imports were raw cotton, machinery and crude petroleum. Exports during 1948 amounted to the equivalent of U.S. $17,228,000, while imports totalled $4,786,000. (S. NR.)

Foundations: *see* COMMUNITY TRUSTS; DONATIONS AND BEQUESTS; SOCIETIES AND ASSOCIATIONS.

Four-H Clubs.

Membership in the 4-H clubs of the United States reached its highest point during 1949 with a total of 1,850,000 rural boys and girls. The number enrolled for the first time was estimated to be about 700,000. Of the total enrolment, about 320,000 were Negro boys and girls.

Percentage of completion of all 4-H projects undertaken also increased slightly to a record of 76.81 for the membership in all states, Alaska, Hawaii and Puerto Rico. Completion of a project consists in the performance of some farming or homemaking activity according to latest scientific methods, in making reports to the club at regular monthly meetings on the methods being used and the progress noted, exhibiting the finished product at a local or county fair and submitting a written report on the project to the leader of the club at the end of the club year.

Paralleling roughly the increase in enrolment, the number of volunteer local leaders of 4-H clubs showed a similar increase. During 1939–49, the number of older youth serving as local leaders of 4-H clubs had grown from 43,258 to 53,820, and the number of adult leaders from 104,092 to 168,999.

The club members' selections of 4-H projects were studied during 1949 in a review of major extension activities. Projects in which at least 5% of all 4-H club members had enrolled fell into 14 main headings: clothing activities, such as making or remodelling garments; food selection and preparation; home gardening; food preservation; home health; swine; poultry; home furnishings and room improvement; corn; dairy cattle; beautification of home grounds; beef cattle; home industries; and home management. The project with the highest percentage enrolled was that of clothing, in which 32% were engaged; second was food selection and preparation, with 24% enrolled; and home gardening ranked third with 19%.

The international aspects of 4-H club work continued to be spread by visits of 4-H leaders on request of other countries as advisers on youth organization, and by visits of leaders of other countries to the United States. From 1944 through 1949, the extension service had aided in this program; trainees from 63 countries had participated, with most of the trainees spending some time in studying the techniques and aims of the 4-H movement. A number of countries throughout the world now had farm youth organizations with some similarity to the 4-H club work of the United States. (M. L. W.)

France.

A republic of western Europe, France is bounded on the north by the English channel, on the east by Belgium, Luxembourg, Germany, Switzerland and Italy, on the south by the Mediterranean sea, on the southwest by Spain and on the west by the Atlantic ocean. Area: 212,737 sq.mi., including the Mediterranean island of Corsica (3,367 sq.mi.). Pop. (1948 est.) 41,500,000. Language: French is almost universally spoken but there are also other regional languages or dialects: German, Breton, Flemish, Provençal, Catalan, Basque, and Italian. Religion: mainly Roman Catholic with *c.* 1,000,000 Protestants and more than 225,000 Jews. Chief towns (pop., 1946 census): Paris (cap., 2,725,374); Marseilles (636,264); Lyons (460,748); Toulouse (264,411); Bordeaux (253,751); Nice (211,165); Nantes (200,265). President of the republic: Vincent Auriol (*q.v.*); prime ministers in 1949, Henri Queuille and (from Oct. 28) Georges Bidault (*q.v.*).

History.—The year 1949 passed with much greater tranquillity than the preceding one. There was no repetition in 1949 of the big strikes of 1948, and there was also a much greater stability of price level. Interest in politics and in trade unionism declined. Communist propaganda was increasingly concerned with "peace," by which was meant opposition to the European Recovery program and the North Atlantic treaty. By December the only rationed commodity was coffee; in the course of the year milk had once more become legally available to adults in towns. Many price controls however remained in force. In spite of them the tendency of the cost of living in the second half of the year was to rise. As compared with incomes, prices—though relatively stable—were high throughout the year. The fight to secure a balanced budget was not yet satisfactorily won, partly because of heavy expenditures in Indo-China and partly because so many of the biggest nationalized undertakings continued to have deficits. The more tranquil course of political life led to a weakening of the double pressure on the Fourth Republic from the Communists on the one hand and the Gaullists, demanding a strengthened executive, on the other. But the working of the republic's machinery had not noticeably improved. The long premiership (by French standards) of Henri Queuille was in part achieved by an attitude that his critics described as "immobilism" and on his resignation there were two false starts and an interregnum of more than three weeks before his government could be replaced.

The Double Pressure Recedes.—The prestige built up by the Queuille government during the Nov. 1948 strikes was reinforced by its two big parliamentary successes in December. The first was a vote of confidence by 377 to 181 in recognition of the government's vigorous protest against the Anglo-American agreement on the Ruhr. This protest was the prelude to three-power negotiations which resulted in the creation of the Ruhr authority and a military security board. On Dec. 29 the French government congratulated Robert Schuman (*q.v.*), minister of foreign affairs, on the results achieved. The government's second success consisted in inducing the national assembly to approve by 341 to 231 an accelerated procedure for voting the budget, by which in the first instance only maximum figures of expenditure for the different ministries should be voted while the credits were to be examined in detail later. In this form the budget was finally voted on the night of Dec. 31, providing for ordinary expenditure of 1,250,000,000,000 fr. and extraordinary (reconstruction and re-equipment) of 615,000,000,000 fr.

On Jan. 12 the government in fulfilment of its promises to stabilize, and indeed reduce, prices issued a series of decrees and administrative instructions aimed at diminishing profit margins in industry and in the distributing trades—especially those of the middlemen dealing in farm produce, of which the prices to the producer were falling without proportionate advantage to the consumer. As on some previous occasions there was more talk of price reduction than was warranted by a situation in which price stabilization alone was a great deal to achieve. This naturally led later to some disappointment; but in spite of the scepticism of the general public the government achieved an interruption of inflationary tendencies. On Jan. 21 the government announced the issue of a loan at 5%. Since purchasers of scrip for 100,000 fr. were able to exchange for new scrip an equal amount of older loans issued at lower rates of interest, the interest of the new loan was really between 6%–7%. At the beginning of March, Maurice Petsche, the minister of finance, announced that the loan had brought in 108,000,000,000 fr. and that in consequence it would be unnecessary to impose any additional taxes in the current year.

The result of the loan was the more satisfactory in that both Communist and Gaullist propaganda against the government were of a character to discourage subscription. The government had had other difficulties. The minister of justice, André Marie, resigned on Feb. 13 when his health (undermined in a concentration camp during the war) collapsed after a running fight with Communists and Gaullists who alleged that a decision had been improperly taken not to prosecute a big building firm which had carried out important military contracts for the Germans during the occupation. Simultaneously the government was under constant pressure to prosecute Communist leaders for propaganda which by alleging that France was becoming the tool of U.S. aggressive intentions against the U.S.S.R., the true friend of the French people, was quite clearly intended to sabotage the integration of France into any western defense system. The government in fact only prosecuted some minor figures, being well aware that the speeches of leading Communists were much too cleverly worded to be actionable and that their words would have most effect if spoken from the dock. The Communists meanwhile had over-reached themselves by provoking Victor Kravchenko to a libel suit. The three-month trial ended on April 4 in a verdict not altogether flattering though in principle almost entirely favourable to Kravchenko; great damage was done to the reputation of the Soviet Union in France by the evidence given about conditions there (which the judge declared mainly irrelevant to the issue).

The Queuille government's prestige reached its height at the county council (*conseils généraux*) elections on March 20–27. These affected half the seats in every county council except that of the Seine (Greater Paris). According to the statistics of the ministry of the interior the Communists won 23.54% of the votes, compared with 26.9% in the same areas in Nov. 1946, and the Gaullists, who had not existed as a party in Nov. 1946, won 25.34%. A generous computation could therefore attribute to the coalition parties 51.12% of the votes. Since the Seine department, where there had been no voting, was one of the areas where both Gaullists and Communists were strongest, since further it was possible to disapprove of the government without supporting either of these parties, the claim of an absolute majority was somewhat specious; but the elections did clearly show that there were at least nearly twice as many people supporting or prepared to tolerate the existing regime than there were in either organized bloc of opponents. It was no longer possible for either Gaullists or Communists to claim convincingly that parliamentary republicanism was the weakest political cause in France.

The Coalition Weakens.—It might be that this success contributed to weaken the cohesion of the coalition when the national assembly met after the Easter vacation. The government had the bad news for it that the budget was not as watertight as had been thought, and that the deficits of the nationalized undertakings were increasing. The government hoped to meet the gap of 83,000,000,000 fr. by economies, including cutting down the investment program and increasing the price of gasoline. Queuille however could only induce the cabinet to agree on the proposals to be laid before the national assembly after that body had been sitting a week. The government had finally to abandon its own gasoline proposals and accept those of the assembly, which proved in practice to be based on erroneous suppositions.

Meanwhile the rivalries between trade union federations were shaking the coalition. When the Socialist trade unionists left the C.G.T. (*Confédération Générale du Travail*) in Dec. 1947 and formed the *Force Ouvrière* trade union confederation they had declared their aim was to improve the purchasing power, not merely the nominal wage of the worker. They had concentrated their attention therefore on bringing prices down. The stabilization of prices was not sufficient satisfaction for their troops. The F.O. trade unions were strongest among minor officials and "white-collar" workers, and largely unsuccessful in competing with the Communist organizations in the mines, heavy industry and the building trade. In the summer they felt it urgent to show that they were prepared to lead strikes, though they rejected all collaboration with the Communist-led C.G.T. The Christian trade union federation (C.F.T.C., or *Confédération Française des Travailleurs Chrétiens*) was no less anxious than the Socialists to show that they were not the tools of capitalism. Possibly because they felt more sure of their troops they declared themselves ready on occasion to co-operate with Communist trade unions. Both of these trade union federations began exerting pressure on their political friends in the coalition

—Socialists in the one case, M.R.P. (*Mouvement Républicain Populaire*) in the other—to resist the tendencies of the increasingly dominant Conservatives. The F.O. civil servants' union called on June 15 a 24-hr. strike of government employees in support of a demand for regrading (that is, in fact, salary increases) which brought work in a number of public offices to a standstill, though it did not affect the police. There were divergencies within the cabinet as to the attitude to strikes in the higher administrative levels; the Socialists had their way and there were no serious sanctions.

The government recovered prestige when Jules Moch, the Socialist minister of the interior, showed himself able to permit without disorder both a Gaullist and a Communist demonstration in close proximity on June 18. A very powerful police force was placed between them but on both sides there was an evident lack of desire for trouble. The Socialist party congress on July 18 approved of the maintenance of the coalition. Almost at once, however, divergent tendencies became apparent again when it was discovered that Daniel Mayer, the Socialist minister of labour, had granted holiday bonuses to the workers of the social insurance system, thereby setting a precedent for yielding to a demand which was being pressed in most branches of industry. The Conservative wing of the coalition protested that this was the thin end of the wedge of wage increases which would destroy the whole policy of stabilization.

The debate on the North Atlantic treaty (ratified on July 27 by 395 votes to 189) proved convenient cover for negotiations to hold the coalition together at least until the beginning of the summer recess. It was only by a majority of 289 to 230 that this was achieved before the national assembly dispersed on July 31. It was hoped that, with parliament absent, the government would hold together. By the end of September there were increasing rumblings of wage claims and Daniel Mayer was advocating the payment of a bonus to the worst paid categories of workers. It was the backwash of British devaluation that finally made agreement within the Queuille government impossible. The unexpectedly low dollar-sterling rate which the British government chose forced the French government to decide on a further devaluation of the franc which all plans had been made to avoid. The fear that this would mean a rapid increase in prices both stiffened the demand for a wage increase and the resistance to it of those who feared inflation. Queuille resigned on Oct. 5. The national assembly was hurriedly summoned.

The Two Weeks' Crisis.—On Oct. 8 President Auriol invited Jules Moch, the Socialist minister of the interior, to form a government. Moch, who was more respected than popular with those who appreciated his services to his country, was particularly hated by both Gaullists and Communists. After a violent all night debate he was invested as prime minister on Oct. 14 by 311 votes, that is, by one more than the constitutional minimum. On the night of Oct. 17 he informed President Auriol that he could not secure the necessary agreement between the parties to form a cabinet. On Oct. 18 President Auriol asked René Mayer, a Radical, to present himself before parliament but, though he secured investment by 341 votes in the national assembly, he also had to inform the president on Oct. 23 that he could not form a cabinet. This was due to his own party's objecting to Daniel Mayer's remaining as minister of labour and the Socialist party's refusal to co-operate on any other terms. Finally, on Oct. 23, the president asked Georges Bidault, the leader of the M.R.P. and former minister of foreign affairs, to form a cabinet. Although the country had remained astonish-

FRENCH FARMER inspecting a newly purchased tractor in 1949, as his family looked on. The tractor, paid for by dollars made available under the European Recovery program, would do the work of six horses

ngly calm, almost indifferent, through this long interregnum, nxiety was beginning to grow and helped Bidault to secure nvestment on Oct. 27, by 367 votes to 183, with 53 abstentions. Only the Communists, led by Jacques Duclos, voted against Bidault.

Bidault formed his government on Oct. 28; Queuille remained n it as minister without portfolio, while Schuman kept foreign ffairs, Moch the interior and Petsche the ministry of finance; Daniel Mayer declined office in order to facilitate the formation of the government and was succeeded by a fellow Socialist, Pierre Segelle; René Pleven, who had for long deplored the ierce opposition between the Gaullists and the parliamentary Republicans, became minister of national defense; René Mayer ccupied the ministry of justice.

Bidault, like his two unsuccessful predecessors, had committed himself both to a nonrecurring bonus for the lowest paid categories of workers and to the return of salaries from government control to collective bargaining. The first commitment was fulfilled but was at once denounced by the trade unions as otally insufficient. The Socialist-led F.O. trade unions called a 24-hr. general strike for Nov. 25 in support of a general wage ncrease and the Communist-led C.G.T. declared its approval. The strike was effective in all the trades dominated by Communist unions and much less so in those dominated by Socialists. The approval of the strike by the executive committee of the Socialist party after it had been declared harmful to the public nterest by the prime minister of a government which included Socialist ministers, was a reminder that the coalition remained badly flawed.

The government's bill for restoring collective bargaining immediately met with sharp criticism because it provided for compulsory arbitration.

The budget estimates for 1950 laid before the national assembly provided for ordinary expenditure of 1,535,000,000,000 fr. and an extraordinary one of 740,000,000,000 fr. The government was asking for 240,000,000,000 fr. of new taxes, but there was sharp resistance to this proposal.

Gen. Charles de Gaulle (*q.v.*) in his press conference of Nov. 14 seemed to show more inclination toward co-operation with other political groups in internal politics, but was if anything more critical than before of France's English-speaking allies. Criticism was widespread, not least in the national assembly, of Great Britain for that country's attitude toward the Council of Europe, which became a very important element in France's political hopes. There was also a good deal of anxiety about the alleged desire of important U.S. groups to arm Germany and Spain rather than France.

From April 20 to April 25 a World Congress of Partisans of Peace was held in Paris under Communist auspices. This brought into existence a permanent organization under cover of which a good deal of Communist activity took place. (*See* also French Union.) (D. R. Gi.)

Education.—(1947–48): Total infant schools 3,648, pupils 387,920; otal elementary schools 84,665, pupils 5,257,244; total secondary schools 947, pupils 427,008; state universities 17, students 129,025.

Finance.—Budget: (1948 actual) revenue 1,021,000,000,000 fr., expenditure 1,596,000,000,000 fr.; (1949 est.) revenue 1,250,400,000,000 fr., expenditure 1,870,000,000,000 fr.; (1950 est.) revenue 2,218,000,000,000 fr., expenditure 2,217,500,000,000 fr. Public debt (June 30, 1948): internal 2,264,734,000,000 fr., external 696,217,000,000 fr. Currency circulation (Dec. 1949): 1,278,000,000,000 fr. Gold reserves (Dec. 1949) 62,000,000,000 fr. On Sept. 20, 1949, the franc was devalued, the exchange rate thereafter being 350 fr.=$1.00 U.S.

Foreign Trade.—The value of imports and exports in millions of francs, for late years, was as follows:

	1946	1947	1948*	1949*
nports	234,042	346,692	672,673	921,794
xports	101,406	213,420	434,047	782,022
Adverse balance	132,636	133,272	238,626	139,722

*Including the Saar, incorporated in the French customs territory as from April 1, 1948.

Transport and Communications.—Roads (1948) 631,000 km.; railways (1949) 25,271 mi.; passengers carried, monthly average (1948) 2,554,000,000 passenger-km.; freight carried, monthly average (1948) 3,457,000,000 ton-km.; navigable waterways (1947) 8,458 km. Shipping (Dec. 31, 1949): merchant vessels 657, gross tonnage 2,709,786. Telephones (1947) 2,108,000. Radio receiving set licences (1947) 5,728,000.

Agriculture.—Production for 1949 (metric tons): wheat 7,850,000; rye 616,000; barley 1,412,000; oats 3,126,000; potatoes (1948) 16,719,000. Wine production in 1949 was about 920,000,000 gal. Livestock (Oct. 1948): cattle 15,437,000; pigs 5,678,000; sheep 7,408,000; horses 2,418,000. Foodstuff production (1949): meat 2,200,000,000 metric tons; milk 2,750,000,000 gal.; fats 400,000 metric tons; sugar 900,000 metric tons. Food rationing in France ended in Dec. 1949.

Industry and Production.—Total for 1949: coal 53,032,000 metric tons; gas 2,400,000,000 cu.m.; electricity 29,700,000,000 kw.hr.; liquid fuel 11,400,000 metric tons; steel 9,124,000 metric tons; cement 6,400,000 metric tons; nitrogen fertilizer 213,000 metric tons; motor vehicles: cars 100,000, tractors 17,100; woven cotton fabrics 150,000 metric tons; wool yarn 130,000 metric tons. (All the above exclusive of the Saar.) The index of employment in manufacturing in 1949 stood at 113 (1937=100); the index of industrial production in 1949 was 112 (1937=100).

Films of 1949.—*Life on a French Farm* (Coronet Instructional Films); *Journey to Provence; Pilgrimage to Brittany* (Simmel-Meservey). (K. Sm.)

Franco, Francisco

(1892–), Spanish army officer and statesman, was born at El Ferrol, Galicia, on Dec. 4. He graduated from the military academy of Toledo in 1910. (For his early career, see *Encyclopædia Britannica.*) On the outbreak of civil war in Spain in July 1936, General Franco became leader of the rebels. After a bitter three-year struggle, he emerged as the *caudillo y generalísimo* of Spain. During World War II, although his sympathies were pro-German and antisoviet, he remained neutral. On June 7, 1947, the *cortes* passed unanimously the Succession act making Spain a nominal kingdom, confirming Franco in office as head of the state for life, according him the right to nominate his successor and stipulating that the candidate for the Spanish crown must be at least 30 yr. old.

In a speech before the *cortes,* on May 18, 1949, Franco accused Great Britain of failure to keep promises made to Spain during the war, quoting Winston Churchill as having said in 1941 to the duke of Alba, then Spanish ambassador in London, that if England won the war it would help Spain to become a strong power in the Mediterranean and support Spain's territorial aspirations in North Africa. (Ernest Bevin declared in the house of commons on June 22 that there was no record in the foreign office archives justifying such a claim, and Anthony Eden said that no such commitment was ever made.) On Oct. 22 Franco arrived aboard the cruiser "Miguel de Cervantes" at Lisbon, Portugal, for a state visit. The visit reciprocated Pres. A. O. de Fragoso Carmona's visit to Spain in 1929 and was Franco's first trip abroad since 1941.

Franklin Institute: *see* Societies and Associations.
Freer Gallery of Art: *see* Smithsonian Institution.
French Colonial Empire: *see* French Union.
French India: *see* French Union.
French Indo-China: *see* French Union.

French Literature.

As the curtain fell on the half century, for many French writers whose participation in postwar public affairs had constituted a logical prolongation of their wartime activities, a curtain fell as well on certain of their illusions concerning the writer's commitment. The non-Communist leftist political party founded in 1948 by Jean-Paul Sartre and David Rousset disbanded as a result of internal disputes; it was rumoured that André Malraux was considering abandoning his position as chief of information for Gen. Charles de Gaulle; even certain Communists and their sympathizers—Edith Thomas, Jean Cassou, Jean Bruller (Vercors), Pierre Emmanuel—announced publicly their break with the ethics of the party. Regimentation, organization even, of the critical, realistic and frequently exasperated French intellect seemed more difficult of accomplishment than at any time since before 1940.

It was inevitable, however, that the long, often tragic confrontation with the many-faceted problem of the individual in the group, involving as it had, the re-examination of philosophical, sociological, political, even metaphysical concepts, should have left a profound mark on contemporary writing, a fact that led one critic to speculate as to whether literature was not on the road to becoming a branch of sociology, or else a laboratory in which philosophical hypotheses were being applied to the description of facts. Commenting on the Balzac centenary celebrations, another, older critic expressed the hope that after rereading *La Comédie humaine,* French novelists would return to observation of their time rather than continue "to wrack their brains over insoluble metaphysical problems." Both critics were possibly unaware that certain writers had already exchanged these problems for those closer to their own métier.

For whatever may have been the nature of their extraliterary preoccupations—whether sociological, philosophical, political or all three—it was evident in 1949, despite the apparent welter and confusion of the French literary scene, that only those who, in addition to having participated in these probings, were also aware of the expanding frontiers of consciousness and of the resultant need for new language techniques and a new optic, had succeeded in emerging above the rising tide of merely competent writing—memoirs, *reportages,* fictionized current events, etc.—that flooded the bookshops as a result of the introduction of high-powered merchandising methods into the French publishing world where, until recently, the goal was prestige rather than large profits. It is, in fact, probably no exaggeration to say that, because of the latter factor in particular, much of the most original writing of the year remained almost clandestine in its *rayonnement.* In any case, the multiplication of commercially inspired literary awards (more than 100 were distributed) brought out no important new talents and only served to weaken the significance of the awards that existed. This situation was particularly evident in the case of the novel which, more than any other literary form, offers perhaps the greatest possibilities of extensive circulation.

Here such classically written works as Jean-Paul Sartre's *La Mort dans l'ame* (third and most interesting volume of *Les Chemins de la liberté*), or Louis Aragon's social novel, *Les Communistes,* received wide notice, as did the two prize-winning novels: Robert Merle's *Week-end à Zuydercoote* (Prix Goncourt), a Hemingway-like story set against the background of the battle of Dunkerque, and Louis Guilloux's 800-page chronicle of life in a small Breton town, *Jeu de patience* (Prix Théophraste Renaudot). It was, nevertheless, in the more experimental works of such less-advertised writers as Marcel Bisiaux (*Les Pas contés*), Noël Devaulx (*Compère vous mentez*), André Dhôtel (*David*), Pierre Gascar (*Les Meubles*), Nathalie Sarraute (*Portrait d'un inconnu*), C. A. Cingria (*Bois sec, bois vert*), that the gradual evolution of the French novel away from the event and commitment toward a new reality that was neither surrealist nor existentialist, could be noticed.

This tendency toward a new reality, a new sort of concretization, was also to be seen among the poets, whose work was more concerned with things than with abstract ideas or with the different *mystiques* that had haunted the immediate postwar years. The appearance of *Main d'oeuvre,* by Pierre Reverdy, served to recall his pioneer role in this direction, the aim of which had been to poetize the concrete, rather than to isolate poetry and things in different spheres. *Proème,* by Francis Ponge, *Fête des arbres et du chasseur,* by René Char, *La Vie dans les plis,* by Henri Michaux, were, each in its way, representative of this tendency. *Contre-terre,* by a younger poet, René de Solier, also revealed this direction. The extraordinary popularity of another concretist, Jacques Prévert, whose satirical, tender, easily accessible poems were being quoted like song hits by an entire generation of young people, was confirmed by the enthusiastic reception of new popular editions of his *Paroles* and *Histoires,* first published in 1946, the former having already sold more than 60,000 copies. Critics noted that this was the first time since Victor Hugo that a poet could be said to have penetrated to this extent, and by word of mouth, into the extraliterary world.

It should be added, however, that the cinema, for which Prévert had written frequently, had done much to make this popularity possible.

Other events in the year's poetic activities were the publication of two volumes by Paul Eluard, *Corps mémorable* and *Une Leçon de morale,* as also of a collection of Philippe Soupault's later poems under the title *Chansons,* and a volume of the collected poems of André Breton. Here it should be recalled that when the critics, Pascal Pia, Maurice Saillet and Maurice Nadeau presented as a supposedly authentic, unpublished poem by Arthur Rimbaud, a pastiche entitled *La Chasse spirituelle* (an affair that caused no little stir in Paris literary circles), it was Breton who immediately launched one of his most penetrating defenses of the true poet in a little volume of accusation entitled *Flagrant délit.*

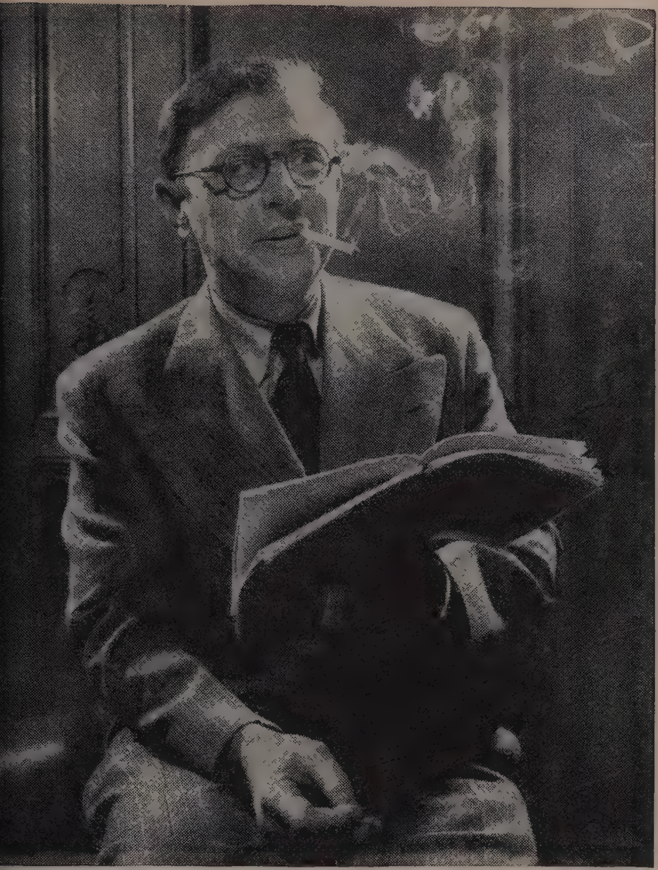
Several excellent poetry anthologies, one chosen by André Gide, were brought out.

During the early theatrical season, a number of established playwrights remained silent, or, as in the case of Henri de Montherlant's *Demain il fera jour,* Jean Anouilh's cynical comedy, *Ardèle ou la Marguerite,* not forgetting Henri Bernstein's lustful *La Soif,* presented plays that added little to their reputation. Two plays of value that marked the first months were that of the Catholic existentialist, Gabriel Marcel, *Un homme de dieu,* a probing analysis of religious motives, and Jean Genêt's desolate if brilliantly written play of crime and punishment, *Haute surveillance. Le Roi pécheur,* a modern poetic version of the Grail legend, by a newcomer to the dramatic field, Julien Gracq, obtained a critical *succès d'estime,* as did the poet Georges Audiberti's *La Fête noire,* for its lyrical satire and verbal richness. A film, *Rendez-vous de Juillet,* based on a scenario by Raymond Queneau, received a Cannes festival award.

The sensations of the fall season were Roger Vailland's *Abélard and Héloise,* and Michel Ghelderode's *Fastes d'enfer,* the former aggressively, intellectually anticlerical, and the latter blasphemous and obscene in the manner of this hitherto neglected Belgian dramatist's Flemish ancestors, Jerom Bosch or Pieter Bruegel. There was a cry of scandal, but both playwrights held the boards for several months. A French adaptation by Jean Cocteau of Tennessee Williams' *A Streetcar Named Desire* aroused considerable interest, as did an excellent performance of Strindberg's *Spook Sonata.*

As usual in France, there appeared a large number of excellent critical essays that varied in subject from the sexual emancipation of women (*Le Deuxième sexe,* by Simone de Beauvoir), or a plan for social, spiritual and political reorganization of France (*L'Enracinement,* by Simone Weil)—both of which were widely discussed—to the more intellectualized esthetic and philosophical considerations of literature and art by Maurice Blanchot (*La Part du feu* and *Lautréamont et Sade*), Maurice Merleau-Ponty (*Sens et non-sens*) or Francis Ponge (*Essais critiques*).

Jean Paulhan's resuscitation of the penetrating critical works of Félix Fénéon was an event of interest, as was the original analysis of Debussy (*Debussy et le mystère*) by the philosopher, Vladimir Jankélévitch.



ÉAN-PAUL SARTRE, French philosopher identified with existentialism; three his books were published in English in 1949; namely, *What is Literature?* essays), *Three Plays* and *Nausea,* his first novel

In the domain of pure philosophy, the year saw the publica- ion of two volumes of lectures delivered before Jean Wahl's *ollège Philosophique* (founded in 1946), as well as an impor- ant book by Gaston Bachelard, *Le Rationalisme appliqué,* hich completed the already vast work of this original thinker. ontinued interest in the philosophy of existence was evidenced y such titles as *De l'essence de la vérité,* a translation from e German of Martin Heidegger; *Le Vrai visage de Kierke- aard,* by Pierre Mesnard; *Gabriel Marcel et Karl Jaspers,* by aul Ricoeur. Sociology, science and political economy were epresented by the important volume, *La Structure elémentaire la parenté,* by the ethnologist, Claude Lévy-Strauss; *Le ythe de l'eternel retour,* by Mircea Eliade; *Loki,* by Georges umézil; *La Part maudite,* by the curiously universal Georges ataille; *La Science et l'espérance,* posthumous notes of Jean errin, awarded the 1926 Nobel prize in Physics, and *Principes fédéralisme,* by Robert Aron.

Among the 20 or so literary reviews, *Cahiers du sud, Esprit, aru, La Table Ronde, 84, L'Age Nouveau, Mercure de France, es Cahiers de la Pléiade, Psyché, Présence Africaine, Contre- oints* and *Dieu Vivant* may be said to have been the most epresentative.

A new review, *Empédocle,* made its appearance during 1949, d the disappearance of Georges Bataille's excellent *Critique* as generally deplored.

Four weekly newspapers: *Les Lettres Françaises, Les Nou- elles Littéraires, Le Figaro Littéraire, La Gazette des lettres* and e daily, *Combat,* supplied well-informed news and criticism literary activities.

(*See* also LITERARY PRIZES.) (M. JOL.)

rench Overseas Territories: *see* FRENCH UNION.
rench Pacific Islands: *see* FRENCH UNION.

French Union. With the establishment, by the constitution of 1946, of the French union, in which are comprised both the mother country and the former empire, the old colonial terminology was abolished and for the colonies were substituted four categories of overseas regions. The older, completely assimilated colonies claimed recognition as French *départements* administered as in the mother country; the others became overseas territories (*territoires d'outre-mer*) which henceforward would elect representatives to parliament and would have their own local assemblies possessed of wide powers; the trust territories, to be known in future as associated territories, were similar in structure to the overseas territories and had the same electoral privileges; lastly, there were the former protectorates, now styled associated states, which could belong to the union only by an act of voluntary accession.

Two of the three central instruments of government already in operation were: (1) the presidency of the French union, exercised, after the passing of the constitution, by the president of the republic ex officio; and (2) the assembly of the French union, of which 75 members represented metropolitan France (50 chosen by the national assembly and 25 by the council of the republic) and 75 members were elected by the assemblies of the overseas countries, which had been sitting in a consultative capacity since Dec. 1947. By an act of April 24, 1949, was instituted the high council of the French union, the function of which was to help the government with the general administration of the union and act in an advisory capacity. It included a delegation from the French government consisting of the chief ministers and representatives of the associated states, under the chairmanship of the president of the union. Its inception was not unattended by difficulty because of uncertainty as to the scope of its powers and to the abstention of Morocco and Tunisia, whose rulers had protested against a statement by the minister of overseas France in which he had included these countries in the French union; by the end of the year, therefore, the high council had still not been summoned.

French Union

Country and area, sq.mi. (approx.)	Population* (000's omitted)	Capital, status, governors, rulers, etc.
AFRICA		
Algeria, 851,298	8,676	Algiers, group of three *départements, Governor general:* Marcel Edmond Naegelen.
Morocco, 153,870	8,300	Rabat, protectorate, *Sultan:* Sidi Mohammed ben Youssef; *Resident general:* Gen. Alphonse Juin.
Tunisia, 48,332	3,400	Tunis, protectorate, *Bey:* Mohammed el-Amin, *Resident general:* Jean Mons.
French West Africa, 1,805,210	16,325	Dakar, group of territories, *High commissioner, governor general:* Paul Béchard.
Mauritania, 449,806	524	Saint-Louis, overseas territory, *Governor* E. Terrac.
Senegal, 75,869	1,994	Saint-Louis, overseas territory, *Governor:* Laurent Wiltord.
Sudan, 450,579	3,137	Bamako, overseas territory, *Governor:* Edmond Louveau.
Haute Volta, 94,208	3,044	Ouagadougou, overseas territory, *Governor:* Albert Mouragues.
Ivory Coast, 120,849	2,031	Abidjan, overseas territory, *Governor:* Laurent Péchoux.
French Guinea, 95,366	2,130	Conakry, overseas territory, *Governor:* Roland Fré.
Niger, 472,973	2,041	Niamey, overseas territory, *Governor:* Jean Toby.
Dahomey, 45,560	1,474	Porto Novo, overseas territory, *Governor:* Claude Valluy.
Togoland, 21,235	953	Lomé, trust territory, *Commissioner:* Jean Cédile.
Cameroun, 170,230	2,820	Yaoundé, trust territory, *High commissioner:* Jean-Louis Soucadaux.
French Equatorial Africa, 969,111	4,131†	Brazzaville, group of territories, *High commissioner, governor general:* Bernard Cornut-Gentille.
Gabon, 103,089	423	Libreville, overseas territory, *Governor:* Pierre Pelieu
Ubangui-Shari, 238,224	1,065	Bangui, overseas territory, *Governor:* Auguste Even.
Middle Congo, 132,046	631	Brazzaville, overseas territory, *Governor,* Jacques Fourneau.
Chad, 495,752	2,011	Fort Lamy, overseas territory, *Governor:* Marie-Jacques Rogué.
French Somaliland, 8,376	46	Jibuti, overseas territory, *Governor:* Paul Siriex.
Madagascar and dependencies, 229,438	4,405	Antananarivo, overseas territory, *High commissioner, governor general:* Robert Bargues.
Comoro, Mayotte and Nossi-Bé Islands, 849	142	Dzaoudzi, dependency, *Ruler:* Prince Said Hussein. *Administrator:* Alain-Louis Alaniou

French Union (Continued)

Country and area, sq.mi. (approx.)	Population* (000's omitted)	Capital, status, governors, rulers, etc.
AFRICA		
Réunion, 970	245	Saint-Denis, overseas *département, Prefect:* Paul Demange.
AMERICA		
Saint-Pierre and Miquelon, 93	4†	Saint-Pierre, overseas territory, *Administrator:* Jean-René Moisset.
French Guiana, including Inini, 34,740	35	Cayenne, overseas *département, Prefect:* Robert Vignon.
Guadeloupe, 686	335	Basse-Terre, overseas *département, Prefect:* M. G. Philipson.
Martinique, 427	262	Fort-de-France, overseas *département, Prefect:* Pierre Trouillé.
ASIA		
French India, 197	348	Pondicherry, overseas territory, *Commissioner:* Jean Chambou.
State of Viêt-Nam, 127,259	21,030	Saigon, associated state, *Ruler:* Bao Dai; *High commissioner:* Léon Pignon.
Bac-Ky (former Tongking), 44,672	9,851‡	Hanoi, province, *Governor:* N'Guyen Huu Tri; *Commissioner:* Gen. Marcel J. M. Alessandri.
Trung-Ky (former Annam), 57,838	7,184‡	Hué, province, *Governor:* Phan Van Giao; *Commissioner:* Gen. Henri A. Lorillot.
Nam-Ky (former Cochin-China), 24,749	5,579†	Saigon, province, *Governor:* Tran Van Huu; *Commissioner:* Gen. Charles M. F. Chanson.
Cambodia, 53,668	3,227†	Pnom-Fenh, associated state, *King:* Norodom Sihanouk; *Commissioner:* Jean de Raymond.
Laos, 91,428	1,189†	Vientiane, associated state, *King:* Sisavang Vong; *Commissioner:* Miguel de Pereira.
OCEANIA		
New Caledonia and dependencies, 7,654	50	Nouméa, overseas territory, *General commissioner for the Pacific islands:* Pierre Cournarie.
New Hebrides, 4,633	50	Vila, Franco-British condominium, *High commissioners:* Pierre Cournarie and Sir Leslie Freeston.
French Pacific Islands, 1,545	56	Papeete, overseas territory, *Governor:* Armand Anziani.

*1948 estimates if not otherwise stated.
†1946 census.
‡1943 estimates.

Total area of the overseas territories of the French union: approximately 4,575,767 sq.mi. Total pop. (1948 est.): 75,837,000. Certain essential information on the component parts of the French union is given in the table.

Algeria.—The cantonal elections held on March 20–27, 1949, confirmed the landslide to the right in the first electoral college (Europeans and *évolués* or developed Moslems) and the success of the "independent" supporters of the government in the second college (Moslems only). Four seats were lost by the Communists and six out of eight by the U.D.M.A. (Union Démocratique du Manifeste Algérien), which, led by Ferhat Abbas, stood for a republic of Algeria. The Nationalist M.T.L.D. (Mouvement pour le Triomphe des Libertés Démocratiques, led by Messali Haj), which attributed its defeat to administrative pressure, expressed itself with accumulated violence in the press and at public meetings. On the whole, however, conditions were quiet. In accordance with its constitution the Algerian assembly elected as its president a Moslem, Salah Abdelkader, who proclaimed his unfailing affection for France. A resolution of the assembly establishing a system of social security for the nonagricultural workers was put into force by a decree of June 10. The three Algerian *départements* were included in the Franco-Italian customs union under the treaty signed in Paris on March 26.

Population.—(Oct. 31, 1948 est.): Europeans 960,000 (11.2% of the total). Chief towns: Algiers (cap., 315,210); Oran (256,661); Constantine (118,774).

Finance.—Budget: (1948 est.) revenue 32,086,600,000 fr., expenditure 32,039,600,000 fr.; (1949 est.) revenue 52,546,000,000 fr., expenditure 52,524,000,000 fr. Monetary unit: Algerian franc=metropolitan franc. Exchange rate (from Sept. 20, 1949): 1 fr.=0.28 U.S. cents.

Foreign Trade.—(1948) Imports 91,400,400,000 fr.; exports 75,350,500,000 fr.

Transport and Communications.—Railways (1947): 4,338 km. Metalled roads (1947); northern Algeria 52,519 km., southern Algeria 282 km.; nonmetalled roads 15,046, tracks 20,575 km. Motor vehicles licensed (Jan. 1948): cars 26,165, coaches 1,003, taxis 1,387, trucks 19,895. Telephone subscribers (March 1949) 56,000. Ships entered (1948): 6,286; cargo unloaded (metric tons) 3,037,600; loaded 5,385,600.

Agriculture.—Main crops (1948, metric tons): wheat 906,980; barley 742,270; oats 117,227; potatoes 164,090; tobacco 21,068; dried figs 38,667, dates 11,516; citrus fruits 131,081; wine (hl.) 12,653,290. Livestock (mid-1948): cattle 968,628; sheep 3,105,121; goats 2,240,277; pigs 142,018: horses 204,790; asses 282,299; mules 229,374; camels 251,979.

Mineral Production.—(1948, metric tons) Phosphate rock 670,000; coal 225,800; iron ore 1,871,500; zinc ore 13,771.

Morocco.—The administrative system introduced by Gen. Alphonse Juin, unfavourable to the Nationalist Istiqlal (Independence) party, led by Si Allal el-Fassi and Ahmed Balafredi, appealed to the French settlers in Morocco who reaffirmed their confidence in him for ensuring the stability of prices and internal peace. On the other hand, the opposition of Sultan Sidi Mohammed ben Youssef seemed unremitting. In reply to a communiqué from the resident general on May 31, declaring that the treaty of Fez of March 30, 1912, was the only instrument regulating relations between the French and the Moroccans, he caused a statement to be issued through the intermediary of the council of vizirs to the effect that "Morocco did not cease to enjoy a position and a sovereignty defined by international treaties."

At the end of December a serious conflict between the resident genera and the sultan was made public. Mohammed ben Youssef was opposed to the organization of trade unions in Morocco if the rights of Morocca workers, including especially the right of election to executive bodies, were limited.

In an agreement signed on Dec. 30 the United States accepted for an indefinite period the prohibition of free imports into the protectorate, which had been imposed by France on Dec. 31, 1948. By admitting certain exceptions to the regulation the agreement gave practical satisfaction to the U.S. without diminishing France's self-respect. The Istiqlal party protested against the fact that Morocco did not take part in the negotiations and demanded that the country should be free to regulate its foreign trade.

Population.—(Jan. 1, 1949, est.): French 287,000 (3.5% of the total) Jews 200,000; foreigners 63,000. Chief towns (pop., March 1947) Rabat (cap., 161,416); Casablanca (551,322); Marrakesh (238,237) Fez (200,946); Meknès (159,811).

Finance.—Budget (1949 est.): balanced at 25,574,000,000 fr. Mone tary unit: Moroccan franc=metropolitan franc.

Foreign Trade.—(1948) Imports 74,865,000,000 fr.; exports 37,188, 000,000 fr.

Transport and Communications.—Roads (1948): 9,181 km.; track 32,000 km. Motor vehicles licensed (Dec. 1948): cars 24,470; com mercial vehicles 19,956. Telephone subscribers (May 1949): 29,500 Ships entered (1948): 5,358.

Agriculture.—Main crops (1948, metric tons): wheat 680,000; barle 1,431,000; oats 46,400; maize 445,900; sorghum 37,300; linseed 32,000 wine (hl.) 364,000. Livestock (1948): cattle 1,449,000; sheep 8,474, 000; goats 6,009,000; pigs 97,000; horses 155,000; asses 555,000 mules 141,000; camels 165,000.

Mineral Production.—(1948, metric tons) Phosphate rock 3,149,000 anthracite 290,200; iron ore 301,300; manganese 195,400; lead 39,200 petroleum 12,900.

Industry.—(1948) Main products: cement 262,200 metric tons; rug 71,400 sq.m.; tinned sardines 950,000 boxes.

Tunisia.—By the death on Sept. 1, 1948, at Pau, Fr., of former Be Sidi Mohammed al-Moncef, deported by the French in 1943 but regarde by the Tunisians as their legitimate ruler, public opinion was rallied t the reigning bey, Mohammed el-Amin, and one of the most acute cause of Franco-Tunisian disagreement was removed. But the Nationalist oppo sition was reinforced on Sept. 8 by the return from Cairo, Egy., Habib Bourguiba, chairman of the Tunisian Destour (Constitutional party to whom the bey accorded a cordial welcome. However, no seriou unrest occurred.

Population.—(1946 census) French 143,977 (4.5% of the total) foreigners (mainly Italians) 95,572; Jews 71,543. Chief towns: Tun (cap., 364,593); Sfax (54,637); Bizerte (39,327); Sousse (36,566).

Finance.—Budget: (1948 est.) balanced at 12,174,000,000 fr.; (194 est.) balanced at 16,343,000,000 fr. Monetary unit: Tunisian franc= metropolitan franc.

Foreign Trade.—(1948) Imports 33,826,000,000 fr.; exports 12,675 000,000 fr.

Transport and Communications.—Roads (Jan. 1949): 8,704 k Railways: 2,174 km. Motor vehicles licensed (March 31, 1949): ca 11,062; commercial 6,465. Telephone subscribers 22,352. Ships entere in Tunisian ports (1948): 2,028; cargo unloaded (metric tons) 1,028,00 loaded 3,115,000.

Agriculture.—Main crops (1948, metric tons): wheat 252,400; barl 100,000; olive oil 26,000; dates 46,000; citrus fruits 21,300; wine (hl 726,000. Livestock (1948): cattle 341,000; sheep 1,588,000; goa 1,083,000; pigs 42,000; horses 72,000; asses 109,000; mules 47,000 camels 177,000.

Mineral Production.—(1948, metric tons) Phosphate rock 1,864,000 iron ore 696,000; lignite 71,000; lead ore 21,600.

French West Africa.—Paul Béchard, the high commissioner of the repu lic for West Africa, was entrusted on Jan. 5, 1949, with putting in operation the military defense of West Africa, Togoland, Cameroun a Equatorial Africa. The natives' Nationalist party, the R.D.A. (Rasse blement Démocratique Africain), offshoot of the Communist party, co tinued its agitation, but its influence was clearly declining, to the adva tage of the local parties, even on the Ivory Coast, where it had mo solidly established itself.

Population.—(1948 est.) Europeans 54,560 (0.34% of the total Chief towns: Dakar (185,000); Saint-Louis (62,900); Bamako (6 100); Abidjan (56,000); Conakry (38,000); Porto Novo (31,000

Finance.—Budget: (1948 est.) balanced at 13,347,000,000 fr. C. A. Monetary unit: franc C. F. A. (Colonies Françaises d'Afrique)= metropolitan fr.

Foreign Trade.—(1948) Imports 19,841,000,000 fr. C. F. A.; expo 18,471,000,000 fr. C. F. A.

Transport and Communications.—(1948) Roads: 75,800 km. Railway 3,726 km. Motor vehicles licensed: cars 3,504; commercial 9,981. Te phone subscribers: 5,665. Ships entered: 2,789; cargo unloaded (met tons) 1,470,000, loaded 1,184,000.

Agriculture.—Main crops (1948, metric tons): peanuts 600,000; c ton 4,500; palm kernels 63,093; palm oil 35,688; bananas (expo 48,356. Livestock (1948): cattle 6,060,000; sheep and goats 18,016,4 horses 186,450; asses 561,700; camels 284,000.

Mineral Production.—(1948) Gold 659.9 kg.; diamonds 77,970 cara ilmenite 3,690 metric tons; zircons 191 metric tons.

Togoland.—According to the Dec. 31, 1948 estimates there were this trust territory 841 Europeans. Capital: Lomé (pop., 30,063).

Finance.—Budget (1949 est.) balanced at 591,350,000 fr. C. F. Monetary unit: franc C. F. A.

Foreign Trade.—(1948) Imports 824,200,000 fr. C. F. A.; expo 1,168,400,000 fr. C. F. A.

Transport and Communications.—(1948) Roads: 3,275 km. Railwa

.9 km. Ships entered at Lomé: 158; cargo unloaded (metric tons) .,346; loaded 39,314.

Agriculture.—Main crops (1948, metric tons): tapioca (export) 12,-9; palm kernels 7,677; palm oil 1,098; cotton 5,707; copra 2,093; anuts 2,560; cocoa (export) 2,955; coffee 1,712. Livestock (1948): ttle 83,712; sheep 259,938; goats 191,448; pigs 169,539; horses 867; asses 2,941.

Cameroun.—According to the Jan. 1, 1949 estimates, there were in is trust territory 6,513 Europeans. Capital: Yaoundé (pop., 1946 est., ,000).

Finance.—Budget (1949 est.) balanced at 2,452,300,000 fr. C. F. A. onetary unit: franc C. F. A.

Foreign Trade.—(1948) Imports 4,888,000,000 fr. C. F. A.; exports 285,000,000 fr. C. F. A.

Transport and Communications.—(1948) Roads: 10,606 km. Railays: 505 km. Telephone subscribers: 480. Ships entered at Duala: 385; rgo unloaded (metric tons) 186,300; loaded 163,300.

Agriculture.—Main crops (1948, metric tons): millet 368,000; manioc 7,000; maize 72,395; bananas 302,558; cocoa 43,000; coffee 5,700; lm kernels 32,000; palm oil 35,000; tobacco 270.

Mineral Production.—(1948) Titanium ore (95% content of TiO_2) 6 metric tons; tin 145 metric tons; gold 333 kg.

French Equatorial Africa.—According to the Jan. 1, 1948, estimates ere were only 13,320 Europeans, including 9,900 French, in all four rritories of French Equatorial Africa. Chief towns: Brazzaville (cap., p., July 1949 est., 83,579, including 4,353 Europeans); Bangui (41,-4); Fort Lamy (18,276); Libreville (12,600).

Finance.—Budget (1949 est.) balanced at 2,688,500,000 fr. C. F. A. onetary unit: franc C. F. A.

Foreign Trade.—(1948) Imports 6,010,000,000 fr. C. F. A.; exports 177,000,000 fr. C. F. A.

Transport and Communications.—(1948) Roads: 22,170 km. Railays: 512 km. Motor vehicles licensed: cars 640, commercial 2,600. elephone subscribers: 950. Cargo unloaded mainly at Pointe Noire and ibreville (metric tons): 236,700, loaded 314,800.

Agriculture.—Main crops (1948, metric tons, export only): cotton ,276; palm kernels 7,563; palm oil 2,389; coffee 2,415; cocoa 2,041; bber 325; mahogany 34,360; okoumé (light mahogany) 172,632.

Mineral Production.—(1948) Gold 1,982 kg.; diamonds 118,000 rats; lead ore 5,006 metric tons.

French Somaliland.—From Jan. 1 the status of Somaliland was raised that of a free territory. A new currency, the Jibuti franc, freely nvertible into U.S. dollars, was instituted on March 20. The 1946 nstitution, which in practice reserved the right to vote to the *évolués*, d the effect of giving a majority to the inhabitants of mixed origin, the detriment of native Danakils and Issa Somalis. The consequence as an outbreak of disturbances which found expression in riots and olence: 38 people were killed and 154 wounded at Jibuti on Aug. 29.

Population.—(1948 est.) Europeans 2,500, including 1,750 French. apital: Jibuti (pop., 22,000).

Finance.—Budget (1949 est.) balanced at 403,274,000 fr. C. F. A. onetary unit: Jibuti franc with exchange rate: U.S. \$1=214.39 buti fr.

Foreign Trade.—(1948) Imports 1,777,400,000 fr. C. F. A.; exports 018,200,000 fr. C. F. A.

Transport and Communications.—(1948) Roads: 25 km. Railway: km. Motor vehicles licensed: cars 169, commercial 210. Telephone bscribers: 296. Ships entered at Jibuti: 1,357; cargo unloaded (metric ns) 240,775, loaded 166,557. The volume of traffic is explained by e fact that Jibuti was the main port serving Ethiopia.

Madagascar.—The supreme court of appeal in Paris on July 7 rejected e petition submitted on the ground of irregularities by the eight prisners convicted on Oct. 4, 1948, by the court at Antananarivo, but the esident of the republic immediately commuted the death sentences to portation for life. The reprieved Malagasy leaders of the armed revolt March 1947 were transferred to the Comoro Islands pending their moval to Belle Isle off the south coast of Brittany, which had been dered by the government on Aug. 2 but which so far had not been fected. From efforts made to secure a revision of the case it became ore and more clear that the accused had not had the benefit of their nstitutional rights. After an inquiry by a commission sent by the sembly of the French union the latter on June 10 requested the govnment to take steps to remedy the situation.

Population.—(1947 est.) Europeans 60,498, including 40,887 French. hief towns: Antananarivo or Tananarive (cap., pop., 165,477, including ,402 French and 2,780 foreigners); Tamatave (29,776); Majunga 6,271); Diego-Suarez (21,677).

Finance.—Budget (1949 est.) balanced at 2,646,147,000 fr. C. F. A. onetary unit: franc. C. F. A.

Foreign Trade.—(1948) Imports 8,941,900,000 fr. C. F. A.; exports 121,500,000 fr. C. F. A.

Transport and Communications.—(1948) Roads: 26,618 km. Railays: 859 km. Motor vehicles licensed: cars 6,087; commercial 3,990. elephone subscribers: 4,616. Cargo unloaded (metric tons) 439,800; aded 244,900.

Agriculture.—Main crops (1948, metric tons): rice 744,323; manioc 7,462; sweet potatoes and taros 201,602; potatoes 90,035; maize ,483; sugar cane 293,400; coffee 23,898; vanilla 461.

Mineral Production.—(1948, metric tons) Graphite 14,228; corundum 330; mica 507; kaolin 40.6. Precious stones (kg.): garnets 133,004; eryls 9,082; agates and chalcedonies 4,030.

Réunion.—In 1946 only 2.67% of the total population (that is, 6,698) ere described as of French origin, although 97% were French. Chief wns (pop. 1946 census): Saint-Denis (cap., 36,096); Saint-Louis (23,-6); Saint-Paul (25,959); Saint-Pierre (22,379).

Finance.—Budget (1948 est.) balanced at 266,558,696 fr. C. F. A. onetary unit: franc C. F. A.

Foreign Trade.—(1948) Imports 2,873,500,000 fr. C. F. A.; exports 2,248,400,000 fr. C. F. A.

Transport and Communications.—(1948) Roads: 790 km. Railways: 126 km. Motor vehicles licensed: cars 2,519, commercial 1,090. Telephone subscribers: 1,950. Cargo unloaded (metric tons) 129,696, loaded 98,631.

Agriculture.—Main products (1948): sugar 67,664 metric tons (1949 est., 110,000 metric tons); rum 86,730 hl.; vanilla 53 metric tons.

Saint-Pierre and Miquelon.—Each of the two islands is a *commune*. Capital: Saint-Pierre (pop., 1946 census, 3,636).

Finance.—Budget (1949 est.) balanced at Fr. C. F. A. 174,800,000. Monetary unit: C. F. A. franc.

Foreign Trade.—(1948, Fr. C. F. A. million) Imports 226.4; exports 246.5. Main exports: salt and fresh cod, seal skins and silver fox skins. Ships entered: 556; cargo unloaded (metric tons) 32,700; loaded 5,060.

French Guiana.—Capital: Cayenne (pop., 1948 est., 10,961).

Finance.—Budget (1946) balanced at 101,700,000 fr. Monetary unit: metropolitan franc.

Foreign Trade.—(1948) Imports 878,000,000 fr., exports 154,000,000 fr. Main exports: gold 330 kg.; balata gum 884 metric tons; tulipwood 9,700 kg. Cargo unloaded (metric tons) 15,000; loaded 3,000.

Guadeloupe.—Chief towns (pop., 1946 census): Basse-Terre (cap., 10,086); Pointe-à-Pitre (41,323).

Finance.—Budget (1947) balanced at 1,049,300,000 fr. Monetary unit: metropolitan franc.

Foreign Trade.—(1948) Imports 5,415,000,000 fr.; exports 3,835,000,000 fr. Chief exports: rum (1947 production: 127,399 hl.), sugar (1947 production: 35,132 metric tons), bananas (1946 production: 48,000 metric tons) and coffee (1946 production: 400 metric tons).

Martinique.—Chief towns (pop., 1946 census): Fort-de-France (66,006); Lamentin (15,114); Sainte-Marie (13,276).

Finance.—Budget (1949 est.) balanced at 988,325,000 fr. Monetary unit: metropolitan franc.

Foreign Trade.—(1948) Imports 6,406,300,000 fr.; exports 4,692,600,000 fr. Chief exports: rum (1948 production: 194,026 hl.) and sugar (1948 production: 33,701 metric tons).

French India.—In the referendum held at Bengali-speaking Chandernagore on June 19, 7,473 votes were cast for incorporation in the Dominion of India and 114 against. Special provisions completely separated the city from other French settlements during the negotiations for its transfer. To comply with the expressed desire of the Tamil-speaking southern settlements (Pondicherry, Yanaon, Karikal and Mahé) for an autonomous system within the framework of the French union, the French council of ministers on Sept. 28 passed a scheme of federation for the four free cities. The referendum to determine the choice between France and India which was to have been held on Dec. 11 was postponed. A rigorous blockade imposed by the Indian government on the expiration of the Franco-Indian customs convention on April 1 affected particularly Pondicherry and Karikal. The transformation of the two cities into free ports greatly increased their traffic in 1949.

Population.—Of the four settlements the largest was that of Pondicherry; the population of the towns was estimated in 1948 as follows: Pondicherry (22,572); Karikal (70,541); Yanaon (5,853); Mahé (18,283).

Finance.—Budget (1949 est.) balanced at Rs. 7,673,120. Monetary unit: rupee. Exchange rate (from Sept. 19, 1949): R. 1=73.50 fr.=21 cents U.S.

Foreign Trade—(1948) Imports 3,214 metric tons valued at 147,000,000 fr.; exports 1,594 metric tons valued at 633,900,000 fr.

Indo-China.—With its political division into three associated states, Viêt-Nam, Cambodia and Laos, forming part of the French union, the name French Indo-China became of only historic significance.

On March 8 the difficult negotiations between the French government and the former emperor Bao Dai culminated in an agreement which guaranteed, within the framework of the French union, the independence of Viêt-Nam comprising the three Annamese speaking *Ky: Tongking*, or *Bac-Ky* (country of the north); *Annam*, or *Trung-Ky* (country of the middle); and *Cochin-China*, or *Nam-Ky* (country of the south). Diplomatic representatives in Viêt-Nam were to be accredited jointly to the president of the French union and the head of Viêt-Nam; the latter was to have independent representation only in China, in Thailand and at the Vatican, their letters of credence being signed by the president of the French union and initialled by the ruler of Viêt-Nam; the Viêt-Namese army would have French instructors; military and economic guarantees in favour of France were also stipulated in the agreement. Viêt-Nam would have 19 representatives in the assembly of the French union.

By the promise of unity to Viêt-Nam, Cochin-China was induced to exchange its status of overseas territory for that of a province of Viêt-Nam, this being decided on April 23, by 55 votes to 6, with 2 abstentions, by a territorial assembly elected for the purpose on April 10. Ratifying this decision on June 3 by 367 votes to 221, the national assembly thus brought to an end the colonial status of Cochin-China which dated back to 1862.

Bao Dai, having proclaimed himself emperor and assuming the title of prime minister, on June 30 formed the first Viêt-Namese government, with Gen. Nguyen Van Xuan, president of the provisional central government of Viêt-Nam since May 1948, as deputy prime minister, minister of the interior and minister of war. By the end of the year the French parliament had not yet ratified the agreement of March 8 which had come into force on June 14 by an exchange of letters between Bao Dai and Léon Pignon, high commissioner of the republic. At a ceremony in Saigon on Dec. 30 the administrative and political powers were formally transferred to the Viêt-Namese government.

The return of the former emperor of Annam did not to any extent rally the non-Communist nationalists or even the Catholics. The economy of the country showed an increasing decline and in spite of successes in the French offensive which won from the Communist-controlled Viêt-

Minh the Catholic province of Phat Diem, to the southwest of Hanoi, Ho Chi Minh continued to control the mountainous region stretching from the Sino-Tongkinese frontier to the frontiers of Cochin-China and Cambodia. Guerrilla fighting kept things everywhere in a state of insecurity. The approach of the Chinese Communist armies strengthened the spirit of resistance of Viêt-Minh and threatened to create a new danger.

In Cambodia the fall of the Penn Nouth government on Jan. 21, following a financial scandal, brought about a crisis which was ended on Feb. 1 by the appointment to the premiership of Yem Sambaur, leader of the Democratic party which had provoked the emergency. The seriousness of the internal situation, because of the successes of the rebel Issaras, supported by Viêt-Minh, and of the progress of the opposition which was taking the risk of compromising the Franco-Cambodian agreement, led King Norodom Sihanouk to dissolve the national assembly on Sept. 18 and to postpone *sine die* the elections which according to the constitution were to have been held within two months. The king proceeded to Paris on Oct. 6 for the purpose of signing the treaty with France, but since the ministerial crisis persisted he was obliged to return on Oct. 26. The treaty was eventually signed by the prime minister, Sisovath Moniret, on Nov. 8. Cambodia sent five representatives to the assembly of the French union.

Because of a budgetary dispute between the government and the assembly, the prime minister of Laos, Souvannarath, resigned on Jan. 2 and was replaced on Jan. 10 by Prince Boun Oum, leading personality of southern Laos. By a treaty signed in Paris on July 19 by Pres. Vincent Auriol and King Sisavang Vong, Laos was recognized as an independent associated state. This agreement led on Oct. 24 to the voluntary dissolution of the "free government of Laos," known as the Lao Issara government, headed by Phya Khammas at Bangkok. Laos sent three representatives to the assembly of the French union.

Population.—(1946 est.) Europeans 26,000, including 23,000 French and *assimilés*. Chief towns (pop., 1949 est.): Saigon with the seaport of Cholon (256,000); Hanoi (160,000 including 6,000 French and 7,000 Chinese); Haiphong (92,000 including 5,000 French and 30,000 Chinese); Pnom-Penh (128,950).

Finance.—Budget (1949 est.) balanced at 1,426,600,000 piastres. Monetary unit: piastre=17 fr.

Foreign Trade.—(1948) Imports 40,087,700,000 fr.; exports 19,918,000,000 fr.

Transport and Communications.—(1948) Roads: 20,370 km. Railways: 3,245 km. Motor ,vehicles licensed: cars 15,500, commercial 7,500. Telephone subscribers: 5,400.

Agriculture.—Main products (1948, metric tons): rice 4,210,000; sugar 15,785; rubber 43,901.

Industry.—Main products (1948, metric tons): coal 338,950; cement 180,500.

New Caledonia.—The population of Nouméa, the captial, was estimated in 1946 at 10,466. There were 18,700 Europeans in the island.

Finance.—Budget (1949 est.) balanced at 274,500,000 fr. C. F. P. Monetary unit: franc C. F. P. (Colonies Françaises du Pacifique)=5.50 metropolitan fr.

Foreign Trade.—(1948) Imports 554,000,000 fr. C. F. P.; exports 328,000,000 fr. C. F. P. Main exports (metric tons): nickel ore 96,415; nickel (mattes) 6,300; chrome 75,021; gypsum 779; copra 1,569; coffee 920; hides 285.

French Pacific Islands.—This overseas territory comprises eight archipelagos, the most important being the Society Islands, including Tahiti (area: 600 sq.mi.; pop., 1946 est., 24,820), with the town of Papeete (pop., 12,428).

Finance.—Budget (1948 est.) balanced at 164,700,000 fr. C. F. P. Monetary unit: franc C. F. P.

Foreign Trade.—(1948) Imports 381,400,000 fr. C. F. P.; exports 405,500,000 fr. C. F. P. Main exports (metric tons): phosphate rock 187,000; copra 18,439; vanilla 154.

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(C. A. J.)

Frequency Modulation: *see* FEDERAL COMMUNICATIONS COMMISSION; RADIO.

Friends, Religious Society of.

Statistics compiled by the Friends World Committee for Consultation indicated that there were more than 176,000 persons in 1949 who bore the name of Friends (Quakers). They composed 53 Yearly Meetings and annual conference groups in almost every quarter of the world: the largest number (119,000) were in North America; there were 24,000 in the British Isles, 26,000 in Africa (chiefly in Kenya and Madagascar), 5,000 in Central America, 1,000 in Australia and New Zealand, 900 on the European continent and 400 in Asia. All Friends share a belief in the inward divine Light "which lighteth every man that cometh into the world."

STORY HOUR for youngsters aged three to five, at the Quaker centre in Ludwigshafen, Ger., where a kindergarten was operated by an American Friend Service committee team in 1949

From the religious concerns of Friends sprang programs o service and education which were world-wide in scope. Th major channels of service were provided, as in previous years by the Friends Service council operating from London and th American Friends Service committee with headquarters in Philadelphia, Pa., and regional offices in 13 American cities. Continuing their work of relief and rehabilitation in countries stil suffering from World War II and its aftermath, English Friend also carried on a ministry of reconciliation through Quake centres in Shanghai, Delhi, Calcutta, Geneva, Paris, Amsterdam Berlin and other cities. The major foreign-service effort of th American Friends Service committee was a large-scale relie program among Arab refugees in the Gaza area of Palestine where in conjunction with United Nations Relief for Palestin Refugees, some 40 Quaker workers distributed food and clothin and provided shelter and medical services for more than 200,00 refugees. The American section of the committee entered a ne field by launching a large-scale project of slum clearance an self-help housing in Philadelphia. Institutes of international relations and volunteer work camps were conducted under the committee's auspices in many American communities, and international service seminars in the U.S., Europe and Japan brough together students of many nationalities for intensive study c international problems.

The continuance of the "cold war" prompted the America Friends Service committee to set up a working party to stud relations between the U.S. and Russia in the hope of findi areas in which tensions could be relaxed and constructive ste taken toward peace. In July the working party released a stat ment later printed in revised form under the title *The Unite States and the Soviet Union: Some Quaker Proposals for Peac* The group concluded, after several months of study and di cussion, that Russian communism and western democratic ca italism are both likely to persist and that peaceful co-existen rather than victory by one side should be the aim of gover mental policy. The report pointed out that current tensio

LIFORNIA FRUITGROWERS keeping smudge pots going all night to pro-
t crops during a cold wave in Jan. 1949. An unprecedented frost brought
vy damage to citrus crops throughout southern California

lect each side's fear of attack by the other but warned that creased armaments would not deliver the world from these rs. Three specific proposals for action were made: the reening of east-west trade; the creation of a neutralized and ified Germany; and the strengthening of the United Nations an agency for settling disputes, for reducing armaments (inding atomic weapons) and for fostering an atmosphere in ich a more effective instrument of world government could be ated.

Although draft calls for military service were suspended, 40 ung Friends were arrested for refusal to register under the lective Service Act of 1948; most of these men were senced to prison. These young Friends, like those who registered conscientious objectors, maintained the historic testimony of Society of Friends against war and preparation for war. All se outward manifestations of religious concern sprang out of onflowing spiritual life of the society which arose, as during ee centuries past, in hundreds of local meetings for worship. ee also CHURCH MEMBERSHIP.)

BIBLIOGRAPHY:—American Friends Service Committee, *Annual Report* 949); Friends Service Council, *Annual Report* (1948–49); *News tes* of the Central Committee for Conscientious Objectors. (F. Ts.)

uit. Though adequate comprehensive statistics were not available, the world fruit crop of 1949 was indicated an abundant one, exceeding that of 1948. The processing of ricots, peaches, pears and prunes was larger, suggesting a nerally favourable outturn. World apple production was estited at 503,800,000 bu., 18% larger than the 427,300,000 bu. of 1948. European production was 12% larger than in 1948, but still 7% below the prewar average. World pear production was indicated at 150,900,000 bu., 30% more than 1948 and 14% higher than prewar.

The U.S. fruit crop in 1949 was about a third larger than in the prewar years 1935–39 and perhaps 10% larger than in 1948. Only pears and sweet cherries, however, made new record high harvests. The apple crop was about 50% larger than the small 1948 one.

Prices for most fruits in 1949 were sharply lower to the producers, and millions of bushels of some kinds, such as apples and pears, were not marketed because harvesting costs appeared likely to exceed the returns. Government support programs were available for some types in the form of purchases for the school lunch program and for export.

Apples.—The U.S. 1949 apple crop totalling 133,181,000 bu. was the largest since 1939, about 150% as much as the small 1948 crop (88,407,000 bu.) and a fifth above average. The crop of the central states was double that of 1948 and about 150% of average. Of 11 leading varieties, accounting for three-fourths of the 1949 crop, all showed increases compared with 1948. Delicious (27,800,000 bu. in 1949, against 18,000,000 bu. in 1948)

Table I.—*U.S. Commercial Apple Production by Leading States*

(In thousands of bushels)

State	1949	1948	Average 1938–47	State	1949	1948	Average 1938–47
Washington	31,820	25,760	28,034	Oregon . .	3,010	2,668	2,871
New York .	20,090	11,750	14,620	Idaho . . .	1,743	1,450	2,092
Michigan .	11,735	4,830	6,840	Indiana . .	1,715	1,018	1,344
Penn. . . .	9,680	4,520	7,598	Conn. . . .	1,640	824	1,256
California .	9,520	5,870	7,959	Colorado .	1,628	1,395	1,524
Virginia . .	7,820	8,240	9,664	Missouri . .	1,548	865	1,229
Ohio . . .	5,446	1,936	3,875	Maryland .	1,251	928	1,603
Illinois. . .	4,176	2,401	3,045	Vermont. .	1,089	774	626
Mass.	3,842	2,194	2,488	Maine . .	1,087	949	717
W. Va. . .	3,720	2,750	3,946	N. Hamp. .	1,056	612	721
New Jersey.	3,124	1,364	2,655				

was the leading variety; McIntosh, second; and Winesap, third.

The average price to producers for the crop was estimated at $1.45 per bushel, a sharp decline compared with $2.23 per bushel for the 1948 crop. It was estimated that 10,500,000 bu. were not harvested because of low prices. World production was estimated at 503,800,000 bu., 18% more than in 1948, but only 1% more than the prewar average.

Apricots.—The 1949 crop in the commercial producing states, California, Washington and Utah, was 200,300 tons, compared with 246,600 tons in 1948, and 12% less than average for the decade. The crop of the major producer, California, was 25% less than in 1948, and that of Washington, 42% more than in 1948. Quality was good and the price slightly higher than in 1948. The world crop was larger than in 1948.

Avocados.—The U.S. production in 1949 was estimated at 17,300 tons, slightly more than in 1948, but somewhat smaller than average. Production in the leading state, California, declined, whereas that in Florida increased about 25%.

Bananas.—The U.S. supply, all imported, amounted to about 20 lb. per capita in 1949, approximately the same as in 1948.

Cherries.—The 1949 U.S. commercial cherry crop was large—243,730 tons, compared with 214,380 tons in 1948 and an average of 172,223 tons. Sour cherries, commercially produced mostly in Michigan, New York and Wisconsin, were a crop of 112,030 tons, against 134,760 tons in 1948. The sweet cherry crop, mostly produced in Washington, Oregon and California, was a record large one of 131,700 tons, two-thirds more than in 1948 and 50% above average.

Cranberries.—The U.S. 1949 crop was 856,800 bbl., significantly smaller than the record high one of 922,500 bbl. in 1948, but 29% more than average. Massachusetts produced 530,000 bbl., 62% of the total crop. The Wisconsin crop was a large one of 210,000 bbl., almost twice the average for the previous decade.

Dates.—The California date crop of 1949 was estimated at 12,800 tons, compared with 16,240 tons in 1948 and only 8,352 tons for the 1938–47 average. Prices were slightly lower than in 1948.

Figs.—The 1949 fig crop of California and Texas was even smaller than in 1948. California produced 28,400 tons of dried figs in 1949 (30,300 tons in 1948) and 7,000 tons not dried, against an average for 1938–47 of 33,030 and 16,130 tons. Texas figs for preserving were estimated at 660 tons in 1949, compared with 1,007 tons average for the decade.

Grapefruit.—The 1949–50 U.S. grapefruit crop was indicated as a small one of 36,350,000 boxes, compared with 45,520,000 boxes in 1948–49, and an average of 50,528,000 boxes for the previous decade. The average price per box to producers was estimated at $1.64, compared with 80 cents in 1948.

Grapes.—The 1949 grape crop of 2,701,500 tons was slightly less than average and considerably below the 3,044,400 tons of 1948, but approximated the prewar production. The California crop, 2,526,000 tons of the total, was far below the 2,857,000 tons of 1948, but about average. More raisins were produced than in 1948, possibly because of the government support program.

Table II.—*U.S. Orange Production by States*

(In thousands of boxes*)

State	1949	1948	Average 1938-47
California			
Navels and miscellaneous	14,900	11,910	19,068
Valencias	26,600	25,000	29,826
Florida			
Early and midseason	33,000	32,000	21,765
Valencias	28,000	26,300	18,175
Tangerines	4,400	4,400	3,530
Texas			
Early and midseason	1,050	2,600	2,163
Valencias	500	800	1,454
Arizona			
Navels	630	450	401
Valencias	610	260	437
Louisiana	310	300	304

*Boxes hold 77 lb. in California and Arizona; 90 lb. in other states.

Lemons.—The indicated 1949–50 average California lemon crop of 12,000,000 boxes (9,930,000 boxes in 1948–49) appeared to be selling at about $2.80 per box, compared with $4.18 in the previous year.

Limes.—The 1949–50 Florida crop of 250,000 boxes was large compared with 200,000 boxes in 1948 and 158,000 boxes, average for 1938–47.

Olives.—California in 1949 produced 39,000 tons, compared with 58,000 tons in 1948 and 46,600 tons, average 1938–47.

Oranges.—The indicated U.S. crop for 1949–50 was 105,600,000 boxes, compared with 99,620,000 boxes in 1948 and 93,593,000 boxes, average 1938–47. Prices, estimated at $1.56 per box for the crop, were lower than the $1.70 of 1948.

Tangerines.—The 1949 Florida crop was estimated at 4,400,000 boxes, the same as 1948.

Peaches.—The U.S. 1949 peach crop was estimated at 74,780,000 bu., considerably larger than the 65,352,000 bu. of 1948 and the 68,947,000 bu. average of the previous decade. The crop was short in the early southeastern states, but the California clingstone crop for canning was a record one, 37% above average. The estimated average price to producers of $1.53 per bushel was below the $2.05 per bushel for the 1948 crop.

Table III.—*U.S. Peach Production by Leading States*

(In thousands of bushels)

State	1949	1948	Average 1938–47	State	1949	1948	Averag 1938–4
California	34,461	30,127	28,273	Colorado	2,109	1,922	1,86
Michigan	3,900	3,250	3,444	Georgia	2,040	2,812	5,35
Washington	2,772	2,210	2,244	Virginia	1,953	1,209	1,49
S. Car.	2,490	3,160	3,671	N. Jersey	1,948	1,175	1,38
Penn.	2,451	2,182	1,920	N. Car.	1,428	1,646	2,22
Arkansas	2,412	2,482	2,188	New York	1,428	1,114	1,34
Texas	2,400	1,140	1,728	Ohio	1,194	780	84
Illinois	2,307	1,428	1,524				

Plums and Prunes.—The 1949 plum crop in California, estimated at 90,000 tons, was one-third above 1948. Commercial dried prune production of 175,100 tons was 1% below 1948 and 13% below average. Prunes marketed fresh were 6% to 7% above 1948, and above average. The states of Oregon, Washington and Idaho canned 29,800 tons, about average, but twice the tonnage canned in 1948.

Pears.—The 1949 pear crop of the U.S. was a record high one of 36,627,000 bu., about 40% more than in 1948 and 20% above average. The Pacific coast states produced 22,450,000 bu. of Bartletts, 50% more than in 1948. Part of the crop was no marketed because of low prices.

Table IV.—*U.S. Pear Production by Leading States*

(In thousands of bushels)

State	1949	1948	Average 1938–47	State	1949	1948	Averag 1938–
California				Michigan	1,200	300	85
Bartlett	14,335	9,418	10,059	New York	1,195	384	94
Other	1,958	1,250	1,471	Texas	484	236	39
Washington				Illinois	410	330	38
Bartlett	5,325	3,780	5,327	Penn.	385	255	37
Other	1,975	1,775	1,900	Ohio	272	178	32
Oregon				Oklahoma	229	142	1
Bartlett	2,790	1,861	1,843	Colorado	204	155	18
Other	3,360	2,964	2,688				

Pineapples.—Florida pineapple production in 1949 was 5,00 boxes, compared with 4,600 boxes in 1948 and an average o 9,900 boxes (1938–47). A large part of U.S. consumption was imported, mostly from the Hawaiian Islands.

Strawberries.—The 1949 strawberry crop was 8,866,00 crates, smaller than the 10,224,000 crates of 1948 or the ten year average (1938–47) of 9,138,000 crates. Acreage was larger but yield and value were about 20% less than the previous year (*See* also HORTICULTURE.) (J. K. R.)

urniture Industry. At the close of 1949 the 4,000 furniture factories in the United States aking wooden household furniture showed a 15% drop in lume compared with 1948 output, but the total value of their oduction, $1,175,000,000, was the second highest in the entire story of the furniture industry, and was surpassed only by e $1,335,000,000 volume reported by the U.S. census bureau r 1948.

At retail, the 1949 output of furniture sold for approximately ,500,000,000.

During 1949 wholesale furniture prices were reduced 4%, e first reduction in eight years. The index figure on furniture ices at the factories was 112.06 in 1946, 142.5 in 1948 and 8.4 in 1949. In 1939 the index figure was 81.1.

The first half of 1949 was difficult for the furniture industry ecause most furniture and department stores were heavily ocked and bought sparingly until August, when they had duced their inventories to normal. The early fall brought a sh of customers that caught many stores short-stocked and ctories were running to capacity during the fall and early inter to fill their requirements. Backlogs, which were down % from the March 1948 figure, rose rapidly and in December ere down only 18% for the comparable month. Shipments in arch were off 21% but in December were only 8% lower an the previous December and only 15% lower for the entire ar.

The approximately 123,000 employees of the 4,000 plants presented a 6% drop in employment for the year and pay lls were 10% lower. Average wages for the industry remained $1.21 per hour, but shorter hours were worked during the st half of the year. The total number of employees of the rniture industry as a whole was 178,560 in 1949, with 39,000 these employed by 1,391 upholstering plants and 16,000 by etal furniture factories.

In 1949 modern furniture again outsold traditional. As in 48, French provincial was the "high style" leader for the ar with 18th-century English designs and Chinese adaptations pidly returning to favour. Mahogany continued the most popar wood, with walnut, maple, oak and cherry rating in the der named.

Dual-purpose furniture and new types, especially for telesion viewers, proved popular at the furniture markets in Grand apids, Mich., Chicago, New York city, High Point, N.C., mestown, N.Y., San Francisco and Los Angeles, Calif., during 49. Tables with swivel tops, upholstered chairs on swivel ses, "Mr. and Mrs." dressers, oversized cocktail tables, long venports and other "king-sized" items were considered smart both manufacturers and the public.

Elimination of credit controls on all household goods during e year brought a rash of competition based on "no money wn" that sold approximately 1,500,000 television receivers, ,000,000 pieces of furniture and several million rugs before e year's end.

Furniture manufacturers showed a net profit of 6% after ending 43.1 cents of every sales dollar for materials; 18.3 nts for labour; 15.8 cents for overhead; 8 cents for selling; cents for administration; and 3.9 cents for income taxes. his was almost the same breakdown as in 1948.

The most interesting development during the year was the vasion of the United States furniture market by England, veden, Norway, the Philippines, Belgium, Italy, Switzerland d Scotland. Canada and Mexico remained the only foreign rniture customers of U.S. furniture factories, and furniture ports were far greater than exports. No Japanese furniture as imported, but much Chinese cane furniture was sold in the S. during the year. France and Germany, once big exporters of furniture, were having difficulty supplying their own markets because of material shortages. (*See* also INTERIOR DECORATION.)

(J. A. G.)

Furs. The year 1949 was one of the worst that the U.S. fur industry had experienced for many years. Reduced consumer demand brought about drastic deflation in prices. The supply of mink was abundant and prices were low. This fur declined in value during the first half of the year but recovered fully in the last quarter. Mink garments at prices 30% to 40% below those of 1948 created a new group of customers. Wild and ranch mink coats, capes, jackets, stoles, etc., sold well. New ranch mink coats sold at retail in New York from $1,500 up.

Persian lamb, beaver and Russian squirrel were popular. Other furs were neglected; the long-haired furs were unwanted. Insolvencies during the year numbered about 150, with liabilities placed at more than $6,000,000.

Government revenue from the fur tax declined steadily. The total amount collected during the first ten months of 1949 was approximately $38,000,000, or $12,000,000 less than for the corresponding period in 1948. All efforts to have the tax removed failed. Congress was sympathetic but indicated a new tax would have to be found to replace the fur tax.

Promotion of fur lined cloth coats, tax free, reduced sales of fur coats. Tax free fur coats were denied further immunity from tax, and merchants were given until March 1950 to dispose of such merchandise.

All the fur exporting countries of the world shipped fur skins to the United States during 1949, especially the U.S.S.R. American furs sold steadily early in the year in many European countries, but quantities were limited because of dollar shortage. In the fall when sterling and other currencies were devalued, American fur shipments to most countries slumped.

The London market transacted an improved volume of business with other countries, but government restrictions hampered home consumption. English fur merchants and processors benefited by improvement in the fur business in Italy, France, Belgium, the Netherlands and the Scandinavian countries. Business in western Germany improved as additional supplies of fur skins became available. The German fur industry was centred in Frankfurt and Bonn. Switzerland imported furs steadily from the United States. Furs from Japan, Korea, India, Pakistan and various countries in Africa reached New York in limited quantities. Chinese Communists took over the fur business in China, and shipments reached the U.S. through Tientsin, Shanghai and Hong Kong.

The fur of greatest importance during the year was Persian lamb, of which about 6,000,000 skins were sold at auction. Prices declined between 30% and 40% during 1949. The supply came in about equal amounts from Afghanistan, the U.S.S.R. and South-West Africa. Persian lambskins were sold at public auction for the first time in Windhoek, South-West Africa, in September.

Estimates put ranch mink skin production in the United States and Canada at less than the 2,000,000 1948 total. An increase in European production of ranch mink was anticipated. Many mink farmers pelted out because of low prices.

Furs dyed fancy colours were introduced. Midnight blue on Persian lamb, broadtail, kid and squirrel was well received. The industry hoped colours would stimulate business. Other colours introduced were cardinal red, emerald green, caramel and navy blue.

New styles were well received and favoured various collars, moderate sleeves and restrained back fullness. Popular lengths were 26 to 40 in. Few coats exceeded 47 in. Little furs remained in favour.

THREE-QUARTER LENGTH COAT of Silverblu mutation mink, a fur introduced by the Mutation Mink Breeders association in 1949

Raw fur imports for the first ten months of 1949 were valued at approximately $91,000,000, compared with approximately $137,000,000 for the corresponding period in 1948. Exports of fur skins for the first eight months of 1949 totalled approximately $26,000,000, compared with approximately $19,000,000 in 1948.

(W. J. Bt.)

Future Farmers of America: *see* Societies and Associations.

Galapagos Islands: *see* Ecuador.

Gambia: *see* British West Africa.

Gambling: *see* Betting and Gambling.

Gas, Natural.

World production figures for natural gas were not available. The United States had the largest reported output, and the combined outputs of all the other countries totalled only one-fifth that of the United States. The following table shows outputs during recent years in those countries for which data were available, in thousands of millions of cubic feet:

	1946	1947	1948	First half, 1949
Venezuela	331.4	402.6	466.2	238.0
Canada	47.9	52.7	59.0	33.0
Mexico	27.1	35.3	37.6	19.3?
Poland	5.3	5.2	6.0?	3.3?
France	3.9	5.2	6.1	3.7
Hungary	3.2	3.6	3.1?	?
Italy	2.2	3.3	4.2	3.2
China	2.2	1.9	1.5	?

United States.—The salient data on the production and consumption of natural gas in the United States are shown in the following table, as reported by the U.S. bureau of mines.

More than half of the natural gas consumption is distributed by the public utility companies, their combined sales having amounted to 2,515,000,000,000 cu.ft. in 1947, 2,728,000,000,000 in 1948 and 2,143,000,000,000 in the first three quarters of 1949.

(*See* also Federal Power Commission.)

Production and Consumption of Natural Gas in the U.S.

(In thousands of millions of cubic feet)

	1943	1944	1945	1946	1947	1948
Gross production	4,942.6	5,614.2	5,902.2	6,190.2	6,733.2	?
Loss and waste	684.1	1,010.3	896.2	1,020.0	1,067.9	?
Returned to ground†	843.8	892.9	1,087.3	1,057.6	1,092.8	?
Marketed	3,414.7	3,711.0	3,918.7	4,095.0	4,582.2	5,148
Exports	11.2	14.6	18.2	17.7	18.1	18
Consumption	3,403.5	3,696.5	3,900.5	4,077.3	4,426.5	4,945
Domestic	529.4	562.2	607.4	650.0	802.2	896
Commercial	204.8	220.7	230.1	237.3	285.2	323
Field use	781.0	855.2	917.0	960.0	933.8	1,021
Carbon black	315.6	355.8	431.8	478.3	484.9	480
Oil refineries	243.6	315.3	338.5	355.0	363.9	441
Cement plants	51.7	35.6	38.3	57.7	60.5	72
Other industrial	1,277.4	1,351.7	1,337.4	1,339.0	1,496.1	1,710
Public utilities‡	305.6	359.7	326.2	306.9	373.0	478
Interstate traffic	920.0	990.5	1,029.8	?	1,402.0	?

*Preliminary. †Mostly for repressuring oil fields; small amounts of surplus gas are returne to the ground for storage. ‡Includes manufactured gas, and not included in the consumptio total.

(G. A. Ro.)

Gasoline: *see* Petroleum.

Gasperi, Alcide de

(1881–), Italian prime ministe was born on April 3 at Pieve Tesin Trentino, then in Austria-Hungary. After studying at the Un versity of Vienna, he became editor of *Il Nuovo Trentino* an later was elected to the Austrian parliament as an Italian mino ity representative. After the union of his native province wit Italy, he was elected deputy to the Italian parliament in 192 He opposed Mussolini's dictatorship and in 1926 was sentence to four years' imprisonment for anti-fascist activities. Durin World War II De Gasperi took part in the resistance movemen in Rome and on June 9, 1944, joined the first Ivanoe Bonom cabinet as minister without portfolio. Minister of foreign affai of the second Bonomi (Dec. 10, 1944) and Ferruccio Par (June 19, 1945) cabinets, he was elected leader of the reco structed Christian Democratic party (*Democrazia Cristiana* and on Dec. 9, 1945, became prime minister.

On Feb. 11, 1949, the 20th anniversary of the signing of th Lateran treaty between Italy and the papacy, he made his fir official call on Pope Pius XII. On March 11 he informed th chamber of deputies that the cabinet was unanimous that Ita should join the North Atlantic treaty. On April 17, in a pre interview, he announced the government's plan for land refor He visited Trieste (*q.v.*) on June 10 and pledged the Itali government to continue to work for the return of the territo to Italy.

(*See* also Italy.)

Gas Turbines: *see* Jet Propulsion.

Gaulle, Charles de

(1890–), French army officer a politician, was born Nov. 22 in Lil France. He was graduated from Saint-Cyr military college 1913. He was captured by the Germans at Verdun in Mar 1916. In 1932 he was appointed secretary-general of the Sup rior Council of National Defense, and in 1934 he published *Ve l'armée de métier*, in which, condemning the doctrine of defen behind a fortified line, he advocated the creation of a mech nized and armoured army for a war of movement. In May 19 he commanded the 4th armoured division which fought the G mans successfully at Laon and Abbeville. On June 6 he was a pointed undersecretary of state for national defense in t Reynaud government. To protest against the opening of t armistice negotiations with Germany by the Pétain governme De Gaulle went to London where, on June 18, he launched Fighting France movement. On Sept. 10, 1944, he was back Paris as head of the French provisional government and co mander in chief of the French forces. On Nov. 13, 1945, t first constituent assembly unanimously elected him head of t new government, but on Jan. 20, 1946, he resigned, finding hi elf unable to preside over a coalition government with comunist participation. On April 14, 1947, he announced that he ould head the R.P.F. (*Rassemblement du Peuple Français*), a ew party which gained nearly 40% of the entire vote in the ct. 1947 municipal elections.

During 1948 and 1949 he continued to direct the R.P.F. In aris, on March 29, 1949, De Gaulle said that there was not "third force," but only Communists and non-Communists. At ersailles, on Oct. 2, he asked for new elections and expressed is confidence that there was a majority in France for a regime orthy of that country. At a press conference held in Paris on ov. 14, De Gaulle sounded a new note when he declared that e unity of Europe should have been built around a directly egotiated Franco-German settlement, based on their community f cultural and economic interests. (*See* also FRANCE.)

iem Stones. Since the beginning of World War II there had been little information available on gem tones other than the diamond (*q.v.*). Rubies and sapphires are ound in Ceylon and Siam, sapphires in Queensland, Austr., meralds in Colombia, South Africa and India. Lesser gems nclude opals from New South Wales and South Australia, and ircons from Indo-China. Brazil and Madagascar both produce variety of lesser gems.

Imports of gem stones into the United States were as follows:

	1947		1948	
	Carats	Value	Carats	Value
ough diamonds	996,514	$42,589,592	912,762	$44,460,365
ut diamonds	347,810	53,471,539	389,314	56,244,934
ough emeralds	7,385	258,062	4,937	28,054
ut emeralds	2,286	75,420	11,213	286,565
earls, natural		366,624		772,763
earls, cultured		737,753		748,302
arcasites		308,724		235,058
ther varieties				
Rough		298,393		258,553
Cut		3,664,048		3,160,778
Imitation		8,605,874		9,794,908
Total		$110,376,029		$115,990,280

Imports of gem stones expanded enormously in recent years, s indicated by the following totals of value covering the decade 939–48:

939	$40,488,136	1944	$ 77,529,806
940	37,769,135	1945	114,435,231
941	33,777,215	1946	189,017,646
942	28,520,070	1947	110,076,029
943	72,109,788	1948	115,990,280

While the United States has no output of precious stones, here is a fairly extensive production of a wide variety of semirecious and ornamental stones, of which agate, jade and turuoise are the most important. (*See* also MINERALOGY.)

(G. A. Ro.)

ieneral Services Administration. The General Services administraion was created by the Federal Property and Administrative ervices Act of 1949 to fill a need for an efficient, businesslike ystem of property management.

Its establishment followed recommendations of Pres. Harry . Truman to the congress in March 1948 and later by the ommission on Organization of the Executive Branch of the overnment.

It was the intent of congress in setting up the General Servces administration to provide for the government an economic nd efficient system for procurement and supply of personal roperty and nonpersonal services; widest possible utilization f available property; prompt disposal of surplus property; and dequate records management.

To achieve this end, the personnel and functions of various overnment agencies engaged in these fields were transferred to the General Services administration. They were: the Federal Works agency, including the Public Buildings administration and the bureau of community facilities; the bureau of federal supply and the office of contract settlement, from the treasury department; the national archives establishment; and the War Assets administration. Jess Larson was named by President Truman as the first General Services administrator.

Thus were consolidated under one arm of the federal government procurement and supply, building construction and management, records management and certain public works functions.

Maximum use and minimum purchases of federal property and nonpersonal services in the field of supply were major goals of the General Services administration. These were to be accomplished by establishing uniform policies and methods for procurement, utilization and related activities.

Centralized purchasing, where it was more advantageous to the government, was to be maintained. Procedures were to be geared to prevent losses to the government through competition of executive agencies for the same articles in the same market, unnecessary buying, lack of quantity purchases and the purchasing of articles by one agency when they were carried as excess by another.

Inventory levels of property held by the various executive agencies were to be watched carefully by the General Services administration to insure maximum utilization. Excess property from an agency that no longer needed it would be transferred to one that did need it. Property which became surplus to the needs of the entire government would be promptly and advantageously disposed of.

General Services was authorized to design and construct any type of federal building, either by direct appropriation or by reimbursement from appropriations made to other agencies. Also, it was to operate, maintain and protect buildings under its jurisdiction throughout the United States, and assign or regulate assignment of office space; lease space for government use in Washington, D.C., and throughout the entire country; and acquire sites for federal buildings to be constructed under its jurisdiction.

Advance planning for nonfederal public works was another responsibility of General Services. The administrator was authorized to make advances of federal funds to encourage states, their agencies and political subdivisions to complete the plan preparation of specific public works and to take other steps necessary to enable them to undertake construction.

General Services also was to maintain in recoverable operation, or in standby status, a reserve of industrial plants, equipment and machine tools, designated by the secretary of defense, to form a nucleus of productive capacity to meet immediate military needs in event of or in anticipation of a national emergency.

Transfer of suitable war surplus structures and facilities to educational institutions was made a duty of General Services, as well as making available to state and local governments surplus property for disaster relief.

Preservation and administration of the permanently valuable records of the federal government, through the national archives establishment, became another major task of General Services.

The *Federal Register*, which publishes official rules and regulations, and the Franklin D. Roosevelt library at Hyde Park, N.Y., were also placed under the jurisdiction of General Services.

The War Assets administration, charged with the disposal of billions of dollars of surplus left over from World War II, was transferred to General Services for the express purpose of liquidation. Of the $27,100,000,000 of war surplus property declared to War Assets or its predecessor agencies, $25,600,000,000 had been disposed of by Oct. 1, 1949. (J. Lar.)

Genetics.

J. V. Neel demonstrated that sickle-cell anaemia was conditioned by a recessive gene; heterozygotes or carriers were shown to have some sickle-shaped cells in their blood. Carriers could thus be detected by a simple blood test. L. Pauling and collaborators showed that the haemoglobin of blood in sickle-cell anaemia was different from normal haemoglobin. In the heterozygotes they found both types of haemoglobin present in the ratio of 40% sickle-cell anaemia haemoglobin to 60% normal haemoglobin. Louis Diamond and co-workers found that 27 of 147 infants suffering from erythroblastosis foetalis, who had received transfusions of Rh-negative blood from male donors, had died while not 1 of the 42 receiving blood from female donors had died. The cause for this difference was not determined.

Micro-organisms.—There were rapid and spectacular advances in this field during 1949. A. D. Hershey and Raquel Rotman inoculated cultures of the bacterium *Escherichia coli* with two different mutant strains of bacteriophage. By suitable dilution they were able to introduce single bacteria into small culture tubes. After the bacteria had burst, the contents of each culture tube was plated separately and the released bacteriophage particles allowed to form colonies on the agar plates. It was found that the released phage particles were of four types, the two original mutant strains, a type which contained both mutants and one which contained neither. By studying different pairs of mutants in this way they were able to show that some of the mutants behaved as though linked in a genetic system comparable with the chromosomes of higher organisms, while others assorted freely; that is, they showed no linkage. This important work demonstrated that even bacterial viruses, the bacteriophages, contained a complex hereditary mechanism. S. E. Luria and R. Dulbecco found that after bacteriophages had been subjected to ultra-violet light many of the single particles could not grow and cause the bursting of a bacterium. However, when a bacterium was infected by two such inactivated particles, it was destroyed by growth of the phage particles. They concluded that each inactivated particle contained a different lethal mutation, and that genetic recombination resulted in lethal-free particles, which then multiplied within the bacterium and caused it to burst.

Drosophila.—M. M. Green and K. C. Green showed that there were three closely linked loci in the X-chromosome of *Drosophila melanogaster,* which on mutation produced lozenge-shaped eyes. Any two of these mutant genes, if each was carried in a separate X-chromosome, would produce the lozenge character. However, if two such mutant genes were carried in the same chromosome, normal eyes were produced. This work demonstrated that the position of the gene as well as its nature determines its action. C. L. Ward showed that in several *Drosophila* species there were strains which differed from other strains in the same species in the number and shape of their chromosomes. He concluded that fusions had occurred between certain chromosomes to form one V-shaped chromosome from two rods. Wilson Stone showed that hybrids of two *Drosophila* subspecies, which were heterozygous for such chromosome fusions, were not less fertile than individuals homozygous for such fusions.

Induced Mutations and Mutation Rates.—L. J. Stadler found dominant modifiers in corn, some of which increased the natural mutation rate while others decreased the rate for seed-colour mutation at the locus studied. C. Auerbach found that formaldehyde increased the mutation rate in *Drosophila* when it was added to the larval food but not when applied in other ways. W. K. Baker demonstrated that flies X-rayed in an atmosphere of nitrogen gave fewer mutations than when X-rayed in air or oxygen. Barbara Hayden and Luther Smith found that X-raying barley seeds in a vacuum gave fewer chromosome aberrations than X-raying in air. G. Kolmark and M. Westergaard induced reverse mutations in the mould Neurospora by the use of nitrogen mustard in low concentrations.

Bibliography.—Curt Stern, *Principles of Human Genetics* (1949); *Genetics,* vol. 34 (1949); "Studies in the Genetics of Drosophila: VI. Articles on Genetics, Cytology and Taxonomy," University of Texas Publication 4920 (1949). (W. P. S.)

Genocide, Convention on: *see* International Law.

Geography.

In 1949 the death of Mark Jefferson, Bailey Willis, Wallace Atwood, W. E. Ekblaw and O. E. Baker, and the retirement from professional positions of other leaders, almost marked the passing of the first considerable generation of American geographers. These pioneers in geographic work and teaching received all, or most, of their scientific training in allied fields such as geology, economics and history, and their individual approaches to geography commonly reflected this background. The younger generation which was taking over the reins had been trained largely in the field of geography.

The 16th congress of the International Geographical union met in Lisbon April 8 to 15. The many sections (I, Cartography; II, Physical Geography; III, Biogeography; IV, Human and Economic Geography; V, Geography of Colonization; VI, Historical Geography and the History of Geography; and VII, Methodology, Teaching and Bibliography) reflected the diverse fields represented. The topics of greatest interest were suggested by the new commissions appointed:

(1) The 1:1,000,000 world map as a basis for geographical distributions; (2) Medical geography; (3) World land use; (4) Regional planning; (5) Soil erosion; (6) Periglacial morphology. For more detailed reports on this congress, the first such congress in 11 yr., see the *Geographical Journal,* CXIV, pp. 76–82, and the *Geographical Review,* XXXIX, 482–87. The next congress was to be held in the United States in 1952. Professor George B. Cressey of Syracuse university was elected president of the union.

The commission on geography of the Pan-American Institute of Geography and History met in Rio de Janeiro Sept. 12 to 24. The meetings were largely exploratory. The 66 adopted proposals outlined many times more work than could be accomplished by the relatively few western hemisphere geographers. It was noted that in several Latin American republics no geographers were active in research and geographic work was almost restricted to elementary instruction. The U.S. delegation proposed a land classification and use survey of the hemisphere based on a map scale of 1:1,000,000. Such a survey would provide basic data for evaluating the need for conservation of natural resources. The world-wide interest in this topic was indicated in "Renewable Resources: A World Dilemma" (*Geographical Review,* XXXIX, 86–98) in which the numerous recent publications on conservation were reviewed.

The work of the Food and Agriculture organization of the U.N. had been of great value in assembling up-to-date data in economic geography. A logical next development was the calling of a conference to promote higher standards of living by mobilizing world-wide science. More than 600 scientists from 50 nations attended the U.N. Scientific Conference on the Conservation and Utilization of Resources at Lake Success, N.Y. Aug. 17 to Sept. 6. The many papers described local progress in resource utilization and conservation, for example: "Recent Experience in Lift Utilization and Drainage in Egypt" and "The Practical Basis of the Norwegian Forest Policy." Little was done in the field of broad world policy, partly because of lack of uthority and partly because so little accurate data was available on world-wide resources. This need for fundamental facts had been stressed at every geographic conference in recent years, and was stated concisely in a call for "A World Inventory" by S. Van Valkenburg at the Lisbon congress (see *Economic Geography*, XXV, 237–39).

The new program of research in medical geography of the American Geographical society was outlined in the *Geographical Review*, XL, 9–41, in an article which surveyed the entire field of medical geography. The society began field work on a comprehensive study of glaciers and ice fields throughout the Americas. These and other programs were initiated before the retirement of Director John K. Wright, who was to be succeeded by George H. T. Kimble of McGill university. The editor of the *Geographical Review*, Gladys M. Wrigley, also retired but would continue to advise the new editor, Mrs. Wilma B. Fairchild.

Accurate maps and other data had been scarce on the physical and economic geography of countries within the "iron curtain." In contrast to authorities on other areas, specialists on soviet geography had had little or no travel experience and no opportunity for unhampered field work within the soviet-controlled areas. For these reasons, the U.S. edition of Balzak, Vasyutin and Feigin, *Economic Geography of the U.S.S.R.* (edited by Chauncy D. Harris) was a valuable contribution although its data was no more detailed than in most regional textbooks.

Both geographers and historians had given increasing attention to the relations between their fields. During the year 1949 a third edition of W. G. East, *A Historical Geography of Europe,* appeared. Two scholarly works by classicists, M. Cary, *The Geographic Background of Greek and Roman History,* and J. Oliver Thomson, *History of Ancient Geography,* showed noteworthy geographic insight. Geographic texts and articles showed an increasing awareness of the historic roots of modern cultural landscapes and most current studies in human geography contained some historical background.

While many larger studies were in progress and many geographic texts and standard works were being revised, the bulk of current research was being presented in scientific journals, both in the field of geography and allied fields. The scope of this work could be best grasped by consulting the annual volumes of the *Bibliographie Geographique* and the monthly *Current Geographical Publications* (compiled by the American Geographical society). (*See* also CARTOGRAPHY; EXPLORATION AND DISCOVERY; NATIONAL GEOGRAPHIC SOCIETY; SOCIETIES AND ASSOCIATIONS.) (O. P. S.)

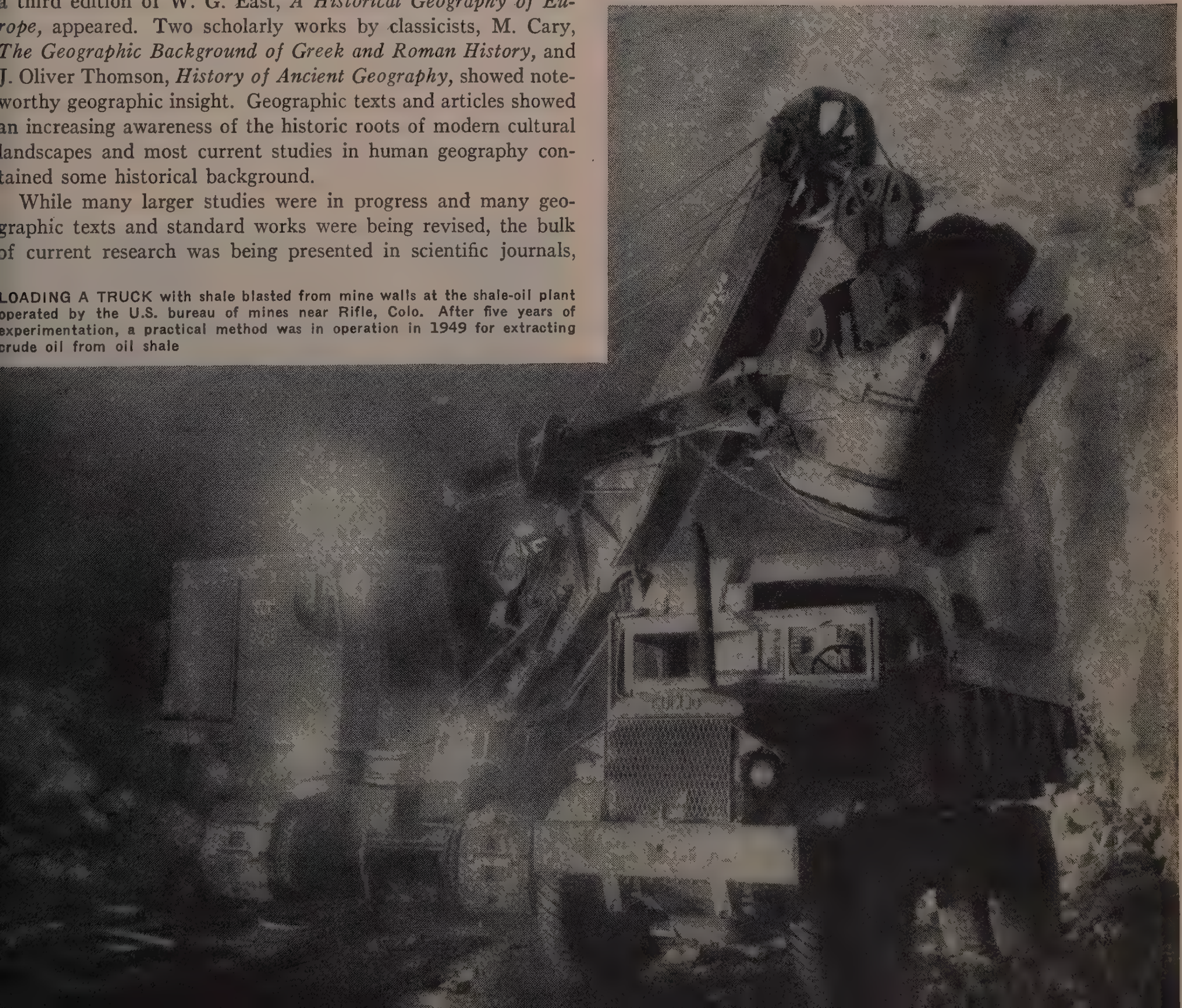
Geology.

Geomorphology.—New editions of two well-known textbooks on geomorphology came from the press in 1949—one by P. G. Worcester, an American, and the other by C. A. Cotton of New Zealand.

Interest in the relatively new science of permafrost and related phenomena was enhanced by a valuable symposium in the March issue of the *Journal of Geology* to which Kirk Bryan, Leland Horberg, H. T. U. Smith and others contributed.

General Geology.—Revisions of *Introduction to Physical Geology* by W. J. Miller and *Geology: Principles and Processes* by W. H. Emmons and others became available. Important new books included *Introduction to College Geology* by Chauncey D. Holmes of the U.S., and *Geology, An Introduction to Earth-History* by H. H. Read of England.

Historical Geology.—Two outstanding textbooks appeared—*Introduction to Historical Geology* by R. C. Moore, and *Historical Geology* by C. O. Dunbar, a successor volume to the *Textbook of Historical Geology* by Charles Schuchert and Carl Owen Dunbar. In Germany, Roland Brinkmann's revision of Emanuel



LOADING A TRUCK with shale blasted from mine walls at the shale-oil plant operated by the U.S. bureau of mines near Rifle, Colo. After five years of experimentation, a practical method was in operation in 1949 for extracting crude oil from oil shale

Kayser's *Abriss der Geologie,* Part 2 of *Historische Geologie,* was issued.

A. J. Eardley's paper on "Paleotectonic and Paleogeologic Maps of Central and Western North America," published in the May issue of the *Bulletin* of the American Association of Petroleum Geologists, set new standards for workers in this phase of geology.

The Committee on Interrelations of Pleistocene Research, R. F. Flint, chairman, of the Division of Geology and Geography of the National Research council, issued a symposium of 12 papers in the September *Bulletin* of the Geological Society of America.

Stratigraphy.—Realization of the importance of facies changes in both pure and applied geology resulted in the publication of a symposium on the subject as memoir 39 of the Geological Society of America, based on a conference under the chairmanship of C. R. Longwell.

"Sedimentary Facies in Gulf Coast" was the subject of a far-reaching paper by S. W. Lowman in the Dec. 1949 issue of the *Bulletin* of the American Association of Petroleum Geologists.

Structural Geology.—In his presidential address before the Geological Society of America, published in the April *Bulletin,* James Gilluly decried the widely accepted concept of the periodicity of mountain-building movements.

A new and considerably improved edition of C. M. Nevin's *Principles of Structural Geology* was welcomed by workers in this field.

Petrology and Petrography.—Further consideration of the problem of granitization dominated the field of igneous petrology. The November issue of the *American Journal of Science* carried a review of the problem by R. A. Daly.

The results of studies of "Internal Structure of Granitic Pegmatites" by E. N. Cameron and others appeared as monograph 2, *Economic Geology.* Crystallization of a magma from the walls inward was considered to be the cause of zoning in these rocks. *Sedimentary Rocks,* by F. J. Pettijohn, represented an outstanding addition to the literature on geology.

Continued interest in research on clays was indicated by several articles. In the January issue of *American Journal of Science,* C. M. Gilbert and F. J. Turner advocated universal stage techniques for the study of sedimentary rocks.

In a brief article in *Science* for Feb. 18, W. H. Newhouse and others set forth a hypothesis for structural (planar) control of migrating chemical elements in metamorphic processes.

Applied Geology.—Two main trends continued to dominate the study of metallic ore deposits: structural control and wall rock alteration. The former had received attention in the excellent *Structural Geology of Canadian Ore Deposits* (1948) by a number of authors, and the latter was the subject for a symposium at the 75th anniversary celebration of the Colorado School of Mines, Golden, Colo. "Rock Alteration as a Guide to Ore—East Tintic District, Utah," by T. S. Lovering and others, published as monograph 1, *Economic Geology,* represented a landmark in this rapidly developing phase of mining geology.

The relation of the mineral content of plants to that of the underlying soils, a comparatively new technique in prospecting, was further considered by H. V. Warren and R. E. Delavault in the March issue of the *Bulletin* of the Geological Society of America.

As an aid to prospectors for radioactive ores, numerous handbooks were published by governmental agencies. *Prospecting for Uranium* (U.S. Atomic Energy commission) and *Prospector's Guide for Uranium and Thorium Minerals in Canada* (bureau of mines, Canada) were examples.

The second edition of *Géologie des Gîtes Minéraux* by E. Raguin seemed valuable for a general study of mineral deposits. *Examination and Valuation of Mineral Property,* third edition by R. D. Parks, also merited the attention of mining engineers and geologists.

A revival of interest in research on the geology of coal was evidenced by several excellent papers by G. H. Cady and others in *Economic Geology* and by a coal research symposium at the meeting of the Geological society of America in El Paso, Tex

Among petroleum geologists the interest in reef limestones as reservoirs for oil and gas increased rapidly as a result of discoveries and extensions of such types of pools in Alberta, Canada, and in the Permian basin of west Texas.

Three new text and reference books in the field of petroleum geology appeared: *Subsurface Geologic Methods,* a voluminous symposium by 42 contributors compiled and edited by L. W LeRoy and H. M. Crain, and published as a quarterly by the Colorado School of Mines; *Principles of Petroleum Geology* by C. G. Lalicker; and *Oil Fields in North America* by W. A. Ver Wiebe. The last was an expansion of the author's *Oil Fields in the United States,* published in 1930. (*See* also MINERALOGY PALAEONTOLOGY; SEISMOLOGY.)

FILMS OF 1949.—*Carlsbad Caverns, N.M.* (National Park Films). (B. H. P.; F. M. V. T.)

George VI (1895–), king of Great Britain, Ireland and the British dominions, was born at York cottage Sandringham, on Dec. 14; for his biography see *Encyclopædia Britannica.*

During 1948 plans were announced for a royal tour of Australia and New Zealand in 1949 by the king, the queen and Princess Margaret; but on Nov. 23, 1948, it was announced that the king was suffering from obstruction to the circulation of the right leg and that on medical advice he was postponing the visit

On March 12, 1949, an operation of lumbar sympathectomy was performed in Buckingham palace by J. Learmonth (who was later invested a knight commander of the Royal Victorian order). The king made good progress and at the beginning o

KING GEORGE VI reviewing troops of the Welsh Guards at Buckingham palace in his first uniformed appearance after a leg operation earlier in 1949 pril went to Royal lodge, Windsor. He returned to London entertain the commonwealth ministers on April 21 and on ay 3 entertained the European foreign ministers who were in ondon for discussions on the constitution of the Council of urope. On July 14 he received the commonwealth finance min- ters who were meeting in London. On June 9 he attended the ooping of the colour parade on the occasion of the official lebration of his birthday, and later in the same month he ficially inaugurated "Colonial Month" at a ceremony at hurch house, London. On Aug. 3 he received the chiefs of staff the United States, Denmark, Norway and Great Britain. On ug. 5 he left London for Balmoral castle for his annual sum- er holiday and was sufficiently recovered from his illness to ke part in many grouse shooting excursions. He received King bdullah of the Hashemite Kingdom of Jordan (*q.v.*) at Bal- oral on Aug. 27; and on Sept. 15 held a privy council at which easures connected with the devaluation of the pound on Sept. 3 were approved. He laid a wreath at the Cenotaph on Re- embrance day, Nov. 6, and on Christmas day broadcast to the eoples of the commonwealth and empire.

eorgia. Georgia, the fourth state to enter the union, ratified the constitution on Jan. 2, 1788. It is located in e south Atlantic region, has an area of 58,876 sq.mi. and is opularly called the "empire state of the south." On July 1, 949, its population, excluding armed forces overseas, was esti- ated at 3,196,000, an increase of approximately 2.3% over the 940 census of 3,123,723 (34.4% urban, 65.6% rural; 64.9% ative white, 34.7% Negro and 0.4% foreign-born). Leading ties and their populations in 1940 were: Atlanta, the capital, 02,288; Savannah, 95,996; Augusta, 65,919; Macon, 57,865; olumbus, 53,280.

History.—In the early part of 1949 the most important po- tical events centred around the regular session of the general ssembly, which convened on Jan. 10 and was adjourned on eb. 19. Several important measures were enacted during the ession: (1) A voters' registration act, requiring all voters to egister regardless of whether they had previously registered, as passed; registrants who could not read and write a given ction of the United States constitution had to answer 10 out f 30 questions on the government of Georgia and of the nited States; (2) the secret Australian ballot, which in the ast had been in effect in less than half of Georgia's counties, as extended to all primaries and elections throughout the ate; (3) the merit system was made applicable to employees several additional departments of state government; (4) all ate employees were required to take an oath disavowing com- unism and swearing to uphold the constitutions of the United tates and of Georgia; (5) persons applying for marriage cences were required to present a doctor's certificate showing eedom from syphilis in a communicable stage; (6) the Mini- um Foundation Program of Education was enacted.

The objectives of the Minimum Foundation program were: increase allotments to the university system, to create a chedule of minimum salaries for public schools and to provide creased funds for vocational education, pupil transportation, uilding needs and other services. However, the program was acted into law without an appropriation of funds sufficient to ut it into effect.

Governor Talmadge convened a special session of the general ssembly on July 18, and during a short session which ended n July 28, taxes on the incomes of corporations and the sale f cigarettes, gasoline, beer and wine were all increased to take are of an additional appropriation of $21,500,000 ($9,000,000 public schools; $1,000,000 to the university system; $5,- 00,000 to rural highway; and the rest to public health and welfare).

At the end of the year the principal state officials were: governor, Herman E. Talmadge; lieutenant governor, S. Marvin Griffin; chief justice of the supreme court, W. H. Duckworth; secretary of state, Ben W. Fortson, Jr.; treasurer, George B. Hamilton; attorney general, Eugene Cook; auditor, B. E. Thrasher, Jr.; comptroller general, Zach D. Cravey; commissioner of labour, Ben T. Huiet; commissioner of agriculture, Tom Linder; superintendent of schools, M. D. Collins; chancellor of the university system, Harmon W. Caldwell.

Education.—During the school year which ended June 30, 1949, there were in Georgia 3,538 elementary schools (1,179 for white children and 2,359 for Negroes) with an enrolment of 593,013 pupils (374,406 white children and 218,607 Negroes) and 16,270 teachers (10,580 white and 5,690 Negro). There were 1,368 high schools (738 for white children and 630 for Negroes) with an enrolment of 159,033 pupils (122,367 white children and 36,666 Negroes) and a teaching staff of 6,702 (5,241 white and 1,461 Negro). State expenditures for public education during the year amounted to $41,220,500.

In 1949 during the fall quarter, 26,588 students (including 2,072 Negro students in the three Negro colleges) were enrolled in the 18 divisions of the university system. The total operating budget of the system for the fiscal year was $17,120,218.

Social Insurance and Assistance, Public Welfare and Related Programs.—Public assistance payments during the fiscal year ending June 30, 1949, reached an all-time high of $27,212,894, an increase of 33.88% over the previous year. Old-age assistance amounted to $21,629,565; aid to the blind $703,993.50; aid to dependent children $4,879,335.50. On June 30, 1949, there were 126,647 persons receiving aid from one of these programs. (On July 1, 1948, there were 109,470 receiving such assistance.) In Nov. 1949 a total of 94,905 persons received old-age grants with an average allowance of $22.73; 2,575 blind persons received benefits averaging $26.70; and 31,875 dependent children received benefits averaging $16.79.

In Nov. 1949 there were approximately 13,500 beneficiaries for unemployment insurance under the Georgia program. The average payment per week of total unemployment was $14.82. Also in November, 1,100 veterans were drawing $20 per week of total unemployment under provisions of the G.I. Bill.

As of June 30, 1949, there were 6,306 prisoners in the various state and county institutions under the control of the state board of corrections. Budget allotments to this board for the fiscal year were $1,044,904.64.

Communications.—According to the state highway department, the road mileage in Georgia as of July 1, 1949, was as follows: total of state, county and city systems 94,801 mi.; state roads 14,876 (9,220 mi. paved and 5,656 mi. unpaved); county roads 76,315 (1,474 mi. paved and 74,841 unpaved); urban streets 3,610 mi. For the fiscal year ending June 30, 1949, total receipts of the highway department were $38,880,789.43 from the following sources: state treasury $27,482,524.12; federal government $9,714,989.56; miscellaneous $1,683,275.75.

On Dec. 30, 1948, there were 6,360 mi. of main-line railroad track in Georgia. In Oct. 1949 the Bell Telephone company reported 475,903 telephones in service in Georgia and, according to the Georgia Public Service commission, there were 46,644 telephones being serviced by other telephone companies in Georgia on Dec. 31, 1948.

Banking and Finance.—On Dec. 31, 1948, there were in Georgia 289 state banks with total assets of $758,158,788.23 and deposits of $693,913,608.41. On June 30, 1949, there were 51 national banks in Georgia with total assets of $941,872,000 and total deposits of $878,832,000.

There were 70 savings and loan, or building and loan, associations (56 federal and 14 state) operating in Georgia on Oct. 31, 1949. Total assets of these associations were $225,000,000 as compared with $160,000,000 on June 30, 1948.

For the fiscal year ending June 30, 1949, the total state receipts were $109,981,071.65, the largest of all time. Budget allotments for the fiscal year ending June 1949 were $108,360,424.33. The state treasury had a net surplus of $6,153,984.16 on June 30, 1949.

Agriculture.—In Dec. 1949 the United States department of agriculture estimated the value of field crops produced in Georgia during 1949 at $366,178,000, a decrease of 16% from 1948.

Manufacturing.—According to the *Census of Manufactures 1947*, the latest made by the bureau of the census, 249,926 persons were employed

Table I.—*Leading Agricultural Products of Georgia*

Crop	1949	1948	Average 1938–47
Cotton, bales	610,000	751,000	779,000
Cottonseed, tons	242,000	303,000	315,000
Corn, bu.	59,400,000	49,182,000	45,255,000
Peanuts, lb.	605,900,000	818,300,000	629,877,000
Tobacco, lb.	116,590,000	95,763,000	88,358,000
Potatoes (sweet), bu.	6,030,000	4,930,000	7,100,000
Hay, tons	698,000	805,000	736,000
Oats, bu.	14,775,000	13,728,000	13,097,000
Velvet beans, tons	221,000	227,000	424,000
Peaches, bu.	2,040,000	2,812,000	5,358,000
Wheat, bu.	2,280,000	2,984,000	2,293,000
Pecans, lb.	17,000,000	39,600,000	26,378,000
Sugarcane syrup, gal.	3,150,000	3,600,000	3,984,000
Potatoes, Irish, bu.	1,296,000	1,024,000	1,573,000
Lespedeza (seed), lb.	19,100,000	16,100,000	6,598,000
Cowpeas, bu.	420,000	478,000	758,000
Sorghum syrup, gal.	590,000	660,000	1,017,000

Table II.—*Major Industry Groups in Georgia: 1947*

Industry	Number of employees	Salaries and wages	Value added by manufacture
Textile	102,535	$205,061,000	$398,023,000
Food	26,774	53,676,000	133,448,000
Lumber (exclusive of furniture)	33,979	44,559,000	88,466,000
Apparel	25,009	40,477,000	76,084,000
Chemical	11,119	24,088,000	77,043,000
Paper	7,319	19,226,000	54,207,000

in Georgia's 4,754 manufacturing establishments. These persons received $484,246,000 in wages and salaries, and a total of $1,015,999,000 in value was added by manufacture. (In 1939 there were 3,055 establishments employing 176,965 persons, who received $142,021,000. Value added by manufacture was $280,032,000.)

Table III.—*Leading Mineral Products of Georgia*

Mineral	Quantity in 1948	Value in 1948	Value in 1947
Clay, raw, short tons	2,216,665	$15,472,110	$13,436,317
Stone, short tons	3,631,430	10,801,355	9,977,938
Clay, products, heavy		7,373,000	5,667,000
Iron ore, long tons	273,735	746,818	693,485
Sand and gravel, short tons	985,729	719,771	575,115
Barite, short tons	62,781	654,959	639,865
Talc, short tons	53,602	624,694	673,351

In Sept. 1949 an estimated 722,600 workers were engaged in non-agricultural employment in Georgia. This was 26,300 less than the total for Sept. 1948.

Minerals.—The mineral production of Georgia was valued at $42,662,000 in 1948 as compared with $37,037,000 in 1947. The value of the principal minerals produced, except cement and fuller's earth, is shown in Table III. (J. F. A.)

Georgia Warm Springs Foundation: *see* SOCIETIES AND ASSOCIATIONS.

German Literature.

The division of Germany into an eastern and a western realm of culture was necessarily reflected during 1949 in the contrast between a predominantly political emphasis behind the "iron curtain," where publishing centred on translation from the Russian and on interpretation of soviet scholarship, and a humanistic and religious resurgence in the west.

Among the wave of lyrical poetry characterizing the first post-nazi years, the verse of Friedrich Georg Jünger (*Poems*) was expected to prove of lasting value; Marie Luise Kaschnitz (*Poems, Dance of Death*) mastered congenially inherited forms in her lucid penetration of two decades of experiences; and Hans-Egon Holthusen's poetry (*Here in Our Time*) revealed an original lyrical mastery, while his essays demonstrated a critical mind of universal scope, implacable realism and differentiated metaphysical and ethical responsibility.

Ernst Jünger, the most powerful prose-writer of contemporary Germany, brought out his war diary (*Strahlungen* [*Radiant Forces*]) which, besides being brilliant literature, included historically significant aspects. His *Heliopolis*, the symbolical image of humaneness resisting the scientific organization of power, was a novel reflecting the immediate past by the fiction of a future potentially inherent in our contemporary civilization. Stefan Andres' story *We Are Utopia* was, with Wolfgang Hoffman-Zampis' *Erzählung* (*Tale*), the most impressive testimony of sensibility to the moral issue of human existence in our time. Andres' novel *The Beast from the Depth*, the first of a cycle to be called *The Flood*, was a literary interpretation of the demonic forces in recent history; the theme was deepened into the metaphysical problem of guilt and punishment by Werner Bergengruen's *Fire Signal*.

Like the narrative prose, the philosophic and historical literature was devoted to clarifying the basic issues of the crisis of the century. Among the numerous personal accounts of experiences during the nazi regime, Hans Speidel's *Invasion 1944* excelled through its classical style and transcended the military to reach the political and the moral issues. Viktor von Weizsäcker's retrospect (*Begegnungen und Entscheidungen*) showed the philosophizing psychiatrist facing the religious, sexual, social and political conflicts of our age with unfailing honesty and criticism, although not without a perspective which was beyond nihilism. To fathom the contemporary significance of the struggle between humanity and barbarism in the light of historical eschatology was the aim of Bernhard Guttmann's *The End of Time*. A similar intention was basic to Hans Sedlmayr's interpretation of 19th and 20th century art as a symbol of a "loss of center" (*Verlust der Mitte*) and Hans Freyer's *World History of Europe*, which viewed the present and future of the western world in the mirror of its past. Constructive possibilities of the existentialist approach to philosophic problems were illustrated by Bultmann's re-evaluation of original Christianity (*Das Urchristentum*), by Heidegger's collection of essays (*Holzwege*) and by Jaspers' *On the Origin and the End of History*. Wolfram von den Steinen's *The Age of Goethe* (Bern) was conceived with a view to the generally western significance of Goethe's epoch and its survival in the present world.

As a monthly of the best literary quality, *Merkur* (Stuttgart) was published by editors of competent humanistic standards; *Universitas* (Tübingen) had a wide scope of information on literature, art and scholarship; *Deutsche Beiträge* (Munich) revitalized a good pre-Nazi tradition of criticism, and *Die Sammlung* (Göttingen) continued the representation of German liberal thought on education, while at the same time taking stands on significant social, historical and literary events. An outstanding weekly newspaper, *Die Zeit* (Hamburg), gave an account of current literature and art; the weekly *Christ und Welt* (Stuttgart) represented the Protestant, and the monthly *Hochland* the liberal Catholic point of view, both with ingenuity and conviction.

The outstanding German writers of 1949 were most impressive by their seriousness in probing the bases of the experience of terror and war and in their search for the firm ground of civilized existence. (AR. B.)

Germany.

A country of central Europe, Germany is bounded on the north by the North sea, Denmark and the Baltic sea, on the east by Poland, on the south by Czechoslovakia, Austria and Switzerland, and on the west by France, Luxembourg, Belgium and the Netherlands. According to a declaration signed in Berlin on June 5, 1945, the country was under the supreme authority of the four Allied powers—the United States, Great Britain, the U.S.S.R. and France—and divided into the four following zones:

Zones	Area (in. sq. mi.)	Population (May 17,1939, census)	Population (Oct. 29, 1946 census)
British	37,723	19,785,500	22,344,900
United States	41,506	14,257,600	17,174,400
French	15,405	6,088,900	5,004,000
Soviet	41,623	15.157,100	17,332,900
Berlin	344	4,321,500	3,180,300
Total	137,335†	59,610,600	65,036,500

Source: *Statistical Bulletin of the Control Commission for Germany (British Element).*

*Excluding the Saar (area 734, sq.mi.; pop. 874,400).

†Including some small German frontier areas which, as agreed upon under the six-power agreement of March 26, 1949, were taken over by Belgium, Luxembourg, the Netherlands and the Saar respectively (total area, 52.1 sq.mi.; total pop., c. 13,500).

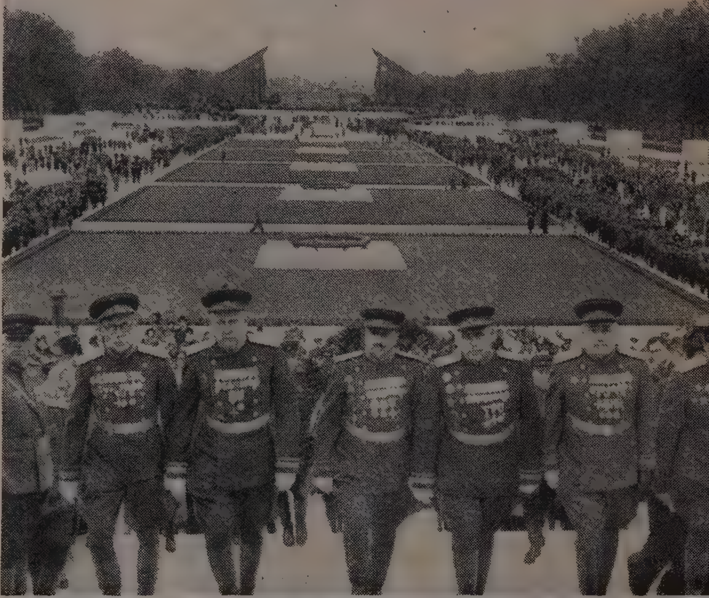
Before the *Anschluss* of Austria the area of Germany was 181,677 sq.mi. with a population (May 17, 1939 census) of 69,317,000. The British, soviet and U.S. zones contained larger populations than in 1939; by 1946 the zonal increases were: British zone 12.9%, soviet 14.4%, U.S. 20.5%. The additional inhabitants were mainly Germans evacuated or transferred from Poland and Czechoslovakia. Only in the French zone was the population less (3.5%) than in 1938. Chief cities (first figure 1939 census; second figure, 1946 census): Berlin (4,332,242; 3,180,383); Hamburg (1,711,877; 1,406,158); Munich (829,318; 738,018); Cologne (772,221; 489,812); Leipzig (707,365;

bove: **BELLIGERENTS** in the west Berlin railway strike facing each other ngrily before an empty train abandoned at a station in the British sector. At ght are passengers and striking rail workers; at left, a group of east Berlin ommunists sent in to reinforce the railway police

ight: **RANKING SOVIET OFFICIALS** attending the unveiling of a war memo- al in the eastern sector of Berlin, May 8, 1949. In October, without holding ections, the Russians set up a separate government for eastern Germany, eaded by Wilhelm Pieck

elow, left: **STEEL WORKERS** at a plant in the Ruhr where production in asic industries rose rapidly in 1949. A formal Allied authority was set up in üsseldorf, April 28 to govern allocations of coke, steel and coal mined in the uhr and to guard against the revival of war industries there

elow, right: **CROWDED FOOD SHOP** in Berlin where unrationed fish was ailable again after the ending of the city's blockade on May 12, 1949



SOVIET COMMENT on the Ruhr, in a cartoon by Dolgorukov, published in *Ogonyok* (Moscow) in 1949

608,111); Essen (666,743; 520,592); Dresden (630,216; 463,032); Frankfurt-on-Main (553,464; 389,097); Duesseldorf (541,410; 421,506); Dortmund (542,261; 436,198); Hanover (470,950; 347,040). Language (1946 est.): German with small admixtures of Lusatian (260,000 in Kottbus-Bautzen area), Polish (150,000, mainly in Westphalia) and Danish (17,000). Religion (1938 est.): Protestant 62.7%; Roman Catholic 32.5%; Jewish 0.7%; others 4.1%.

During the year 1949 Germany was virtually partitioned into two states with a special provisional regime for Berlin (*q.v.*).

Western Germany.—Area, 94,634 sq.mi. Pop. (June 30, 1949, est.), 47,254,900 which indicated an increase of 2,731,600 after Oct. 29, 1946; during the first six months of 1949 alone the population of western Germany had increased by 407,000 including 105,000 returning prisoners of war and 162,000 refugees from the soviet zone. Capital: Bonn. President of the Federal Republic of Germany, Theodor Heuss (*q.v.*); federal chancellor, Konrad Adenauer (*q.v.*). Allied high commissioners: British, Gen. Sir Brian Robertson; French, André François-Poncet; U.S., John J. McCloy (*q.v.*).

Eastern Germany.—President of the German Democratic republic, Wilhelm Pieck (*q.v.*); prime minister, Otto Grotewohl (*q.v.*). Soviet Control commission: Gen. Vasili Ivanovitch Chuikov, chairman; Ivan Fedorovich Semichastnov, deputy chairman; Vladimir Semenovich Semenov, political adviser.

History.—The establishment of a west German federal republic and of an east German Democratic republic in 1949 marked the final stage of the partition of Germany. The three western Allies, despite many disagreements, maintained a common policy of progressively handing back to western Germany its sovereignty and of modifying and reducing the restrictions and limitations on its industry. The remaining restrictions were to be supervised by the Ruhr authority and the Military Security board.

The Ruhr statute which was published by the three western Allies in Dec. 1948 provided that a Ruhr authority was to allocate coal, coke and steel, prevent discriminatory trade practices and safeguard foreign interests in the Ruhr. It was to consist of 15 members (3 U.S., 3 British, 3 French, 3 German, and 1 from each of the Benelux countries). The German political leaders protested against the Ruhr statute on the grounds that it would be used to prejudice western Germany's competitive position and that such international control could only be justified if its authority were extended over the whole of western Europe's heavy industry. This latter contention later received support from the French Socialist party and from the U.S. high commissioner, John J. McCloy.

On Jan. 17 it was announced that the Allied Military Security board had been established, consisting of Major General James P. Hodges (U.S.), Major General V. J. Westropp (Great Britain), General Etienne Paskiewicz (France). Its sphere of responsibility was to be prevention of military organizations, of the manufacture or import of arms by western Germany and of war preparations through scientific research.

Major political and industrial concessions to western Germany which had been discussed in London during the first two months of the year became accomplished facts in April and May. On April 13 at Washington, it was announced that the three western ministers of foreign affairs had signed an agreement under which 159 industrial plants scheduled to be dismantled were to be struck off the dismantling list. The Washington agreement also permitted western Germans to construct any number of high-sea ships up to 7,200 tons and a speed of 1 knots. The following production quotas were authorized in the case of the industries forbidden under the Potsdam agreemen of 1945: ball-bearings 33,000,000 units a year; aluminum 85,000 tons a year; styrin 20,000 tons a year. All synthetic gasolin and synthetic rubber plants were to be dismantled with the exception of the Wesseling hydrogenation plant. Aircraft construction and the manufacture of raw magnesium and beryllium remained forbidden.

German Federal Republic.—On May 8 the Basic law or constitution for the west German Federal republic was agreed upo by the parliamentary council of 65 members which had bee elected by the state (*Land*) parliaments in Oct. 1948 and whic had been drafting and debating this constitutional documen for eight months at Bonn. There were 12 votes cast agains the Basic law—6 by the Bavarian Christian Social union an two each by the Centre party, the German party and the Communist party. The final adoption was preceded by two month of debate and negotiation between the leading west Germa political parties and the Allied authorities. In general the western Allies favoured in varying degrees a constitution whic would establish a highly decentralized federal state. The Christian Democratic union was also in favour of concentrating mor power in the hands of the individual states (*Lander*) than wa thought desirable by the Social Democratic party who anticipated that without a higher degree of centralism the socia reforms which they advocated could not be implemented. Th most contested field was finance. A deadlock between the view point of the western authorities and that of the Social Democratic leaders developed. On April 22 this was resolved by th Allied military governors' handing over to the parliamentar council a letter from the three western foreign ministers whic made the following concession in the direction of greater centralism: the federal government could claim, in addition revenue from customs, monopolies, consumers' taxes, turn-ov tax and property tax, part of the revenue from income tax an corporation tax; it was envisaged that this additional revenu would be used to subsidize education, health and welfare in th poorer states.

The Basic law, which finally emerged and was adopted, provided for a two-chamber system consisting of a federal di (*Bundestag*) to be directly elected every four years and federal council (*Bundesrat*) consisting of members of the individual state governments. The states were to have three to fi representatives in the federal council, according to their population, but each state delegation was to have only one vote. The principal powers of the federal council consisted of the right to demand that a joint commission of the federal diet and the federal council should debate any given law, and of the right of veto. The federal diet could, however, overrule the council's veto by an absolute majority. The federal president was to be elected by a federal assembly consisting of the federal diet and 400 delegates elected by the state diets (*Landtage*); he was to propose the federal chancellor who would then select his ministers. Implementation of the federal government's laws was to be in the hands of the states, except in the following fields: foreign affairs, federal finance administration, post, inland waterways and shipping, federal railways, frontier control and criminal police.

Most interesting of the clauses of the Bonn constitution were two aimed at eliminating weaknesses in the constitution of the Weimar republic of 1919–33 which had led to the destruction of democratic government. The first was article 21 which ruled that "parties which by their aims or the behaviour of their supporters are calculated to damage or destroy the fundamental free democratic order are unconstitutional." The other, article 67, to prevent party groupings in the legislature from following negative and irresponsible courses—laid down that the federal diet could only pass a vote of no-confidence in the chancellor if it chose a successor by means of a majority of its members and asked the president to dismiss the chancellor. According to the Basic law, Berlin was named as part of the west German Federal republic, but the three Allied military governors did not agree to the admission of the former capital in practice because of their desire not to embitter relations with the soviet union still further.

On Aug. 14 elections for the federal diet were held throughout the three western zones of Germany. Out of the 402 seats contested the C.D.U. (Christian Democratic union) allied with the Christian Social union won 139, the S.D.P. (Social Democratic party) 131, and the Free Democratic (Liberal) party 52 seats. Two extreme right-wing parties, the Bavarian party and the German party or D.P. (*Deutsche Partei*) won 17 seats each. Surprising was the securing of 12 seats by the extreme nationalist Alfred Loritz's W.A.V. (*Wirschaftliche Aufbau Vereinigung* or Economic Reconstruction union) and of 5 seats by the near-nazi German party of the Right (*Deutsche Rechtspartei*). The elections were fought with some bitterness, and the leading parties' chief bid for electoral support consisted in violent attacks on the occupying powers, particularly for their policy of dismantling.

On Sept. 12 Theodor Heuss was elected federal president and on Sept. 20 Konrad Adenauer, the leader of the Christian Democratic union, formed a coalition government based on the C.D.U., the F.D.P. and the D.P.

Noteworthy in Adenauer's first speech as federal chancellor was his declaration that western Germany would not accept the Oder-Neisse frontier, which marked the border of the eastern territories annexed by Poland and the U.S.S.R.

On the day following the formation of the west German government the western military governors made over to it extensive new powers. These were defined in an Occupation statute which placed all governmental authority in German hands, with the exception of the following reserved fields: disarmament and demilitarization; Ruhr control, reparations, decartellization, trade discrimination, and foreign interests in Germany; foreign policy, displaced persons and admission of refugees; the prestige and security of Allied occupation forces; the safeguarding of exchange rates; control of internal affairs to ensure that money and food should be used so as to minimize aid from abroad; custody of people arrested or sentenced by occupation courts.

The three occupation authorities retained the right to resume full powers if necessary for security, for the maintenance of democratic government or for fulfilling international obligations. They also retained a right to veto any law within 21 days of receiving it, but pledged themselves to exercise this right only in the case of a law conflicting with the Basic law, with the state constitutions, the Occupation laws, the Occupation statute or the basic aims of the occupation. Provision was made for a review of the Occupation statute within 18 months after coming into operation.

The three military governors were renamed high commissioners to function as a unity in an Allied High commission which would not deal with German authorities below the level of the federal or state governments, except in the field of the reserved subjects.

On Nov. 3 the federal diet decided upon Bonn as the federal capital, thus settling a controversy which had raged for many months on the relative merits of Frankfurt and Bonn.

Against this background of constructive political concessions western Germany still had to face in 1949 two punitive measures in exaction of reparations: the first was provisional frontier rectifications at Germany's expense, the second the continuance of dismantling of industrial plants. The provisional frontier rectifications carried through on April 23 for the benefit of the Netherlands, Belgium, Luxembourg and the Saar were very small. Only 52.1 sq.mi. and 13,500 German inhabitants were involved, but the west German political leaders and press attacked the unilateral rectifications bitterly as violations of the clause of the Atlantic charter in which the western Allies had foresworn territorial annexations. Karl Arnold, the prime minister of North Rhine-Westphalia, made the proposal that, in lieu of ceding territory, Germany should construct a road for Belgium and take part in the draining of the Zuider Zee. Following this initiative Belgium renounced the major part of its frontier claims.

West German resistance to industrial dismantling reached a climax in the summer when the synthetic gasoline plants in the Ruhr were dismantled. At Bergkamen and Ruhr Chemie, Oberhausen, Allied troops had to occupy the factories before dismantling could proceed, and six dismantling workers who had refused to dismantle at the Dortmunder Paraffinwerke were sentenced to two months' imprisonment, though subsequently released on good behaviour. Two workers of the same plant received prison sentences of five months, and three weeks for assaulting a dismantling contractor.

During the Washington talks in September between the three foreign ministers Ernest Bevin suggested that dismantling should be terminated by Nov. 1. On Oct. 8 the U.S. high commissioner in Germany, in a news agency interview, urged the ending of the "senseless dismantling." The French government was less willing to make further concessions to western Germany. (*See* also Reparations.)

German Democratic Republic.—In October an event occurred which made agreement upon further concessions by the western Allies to the west German republic politically urgent and therefore easier of achievement. A German Democratic republic was proclaimed in the soviet zone. Already on May 15 and 16 a people's congress (*Volkskongress*) had been elected in the soviet zone and the soviet sector of Berlin under a plebiscite arrangement, each voter having the chance to vote "yes" or "no" to a single zonal list of candidates, also to "the unity of Germany," the early conclusion of a peace treaty and the withdrawal of the occupation forces. It was announced that 95.2% of the voters had gone to the poll and that 66% of these had voted "yes" in this election in which there was much evidence of falsification and pressure. This people's congress elected a people's council (*Volksrat*) of 420 which was transformed on Oct. 7 into a provisional people's Chamber (*Volkskammer*) for the new republic. A chamber of the states (*Landerkammer*) was nominated three days later and on Oct. 11 the two chambers elected Wilhelm Pieck president of the Democratic republic. Otto Grotewohl of the S.E.D. (*Sozialistische Einheitspartei*) or Socialist Unity party formed a provisional government of seven S.E.D. ministers, three from the Liberal Democratic party, four from the Christian Democratic union, one from the National Democratic party and one from the Democratic Farmers' party and one of no party allegiance. The key ministries—interior, justice and one of deputy premiership—were in the hands of the S.E.D. (communist) ministers Karl Steinhoff, Max Fechner and Walter Ulbricht. At the same time General Chuikov announced that a soviet Control commission would replace the soviet Military administration whose administrative functions would be transferred to the German provisional government. On Oct. 16 Georgi Pushkin was appointed soviet ambassador to the new German Democratic republic and Rudolf Appelt was sent as German representative to Moscow.

On Aug. 20 Wilhelm Pieck had announced that the soviet zone government would claim to represent all Germany, and on Oct. 21 the western German chancellor answered by declaring: "Only the West German Federal Republic has the right to speak for the German people."

Other Events.—The façade of concessions by the Russians to the Germans in their zone of Germany undoubtedly spurred the western Allies to improve the status of the west German republic. At a conference of the three western foreign ministers in Paris (Nov. 9–11) agreement was reached on the basis of a number of offers to be made to the west German government in return for its co-operation in the Ruhr Control authority and with the Military Security board. On Nov. 22 a protocol was signed at the Petersberg hotel in Bonn by the three Allied high commissioners and the west German chancellor under which, in return for full German co-operation with the Ruhr authority and the Military Security board, dismantling was suspended of all except 11 plants, western Germany could build or acquire immediately six ocean-going ships above the limits laid down at Washington in April 1949, German consulates and trade missions were to be established abroad and Germany's participation in international organizations and in the Council of Europe was to be promoted. German participation in the International Patent office at The Hague had been sanctioned on Nov. 17 and west Germany's representative had taken his place in the Organization for European Economic Cooperation (*q.v.*) on Oct. 31.

International discussion as to whether Germany should be invited to join the new Council of Europe started in May 1949 when the statute of the Council of Europe was adopted and a clause was included providing for "associate membership," that is, membership of the consultative assembly only, in the case of countries such as western Germany which could not send a foreign minister to the Committee of Ministers.

At the first session of the Assembly of Europe in Strasbourg in August and September Winston Churchill energetically advocated west German membership but Robert Schuman, on behalf of France, laid down, as a pre-condition, that the Saar must also be admitted as a member. Churchill agreed that a Franco-German understanding on the Saar question was a prerequisite of Germany's admission. On Nov. 3 the west German chancellor stated in a newspaper interview that western Germany would not refuse to enter the Council of Europe if the Saar were admitted. In this he was at variance with the Social Democratic party, whose leader, Kurt Schumacher declared on Nov. 9 his opposition to the French proposal to admit the Saar. In November the committee of ministers meeting in Paris passed a resolution in favour of Germany's admission to the Council of Europe, and the way seemed open. (*See* also EUROPEAN UNION.)

Behind the east-west tug-of-war over western Germany and the mass of new constitutional documents and institutions which came into being in 1949, there loomed for the new federal government three gigantic social problems: housing, unemployment and refugees. There were 5,000,000 new dwellings required in western Germany and the federal government planned a program of 250,000 new dwellings for 1950; unemployment reached a figure of 1,332,000 including 438,000 refugees from eastern Europe or from the soviet zone; the total of refugees from the east in western Germany was about 8,000,000, and was increasing at the rate of 1,000 a day in the autumn of 1949. Most of the refugees were embittered, impoverished and politically irreconcilable to the loss of their homelands. Many thousands of them were housed in congested camps.

In the first ten months of the year about 240,000 German prisoners of war returned home from the Soviet Union. On Oct. 29 Wilhelm Pieck promised that the remainder would be repatriated by Jan. 1, 1950. About 600,000 German prisoners of war and civilian prisoners still remained in the U.S.S.R. in December. (*See* also COUNCIL OF FOREIGN MINISTERS; PRISONERS OF WAR; REFUGEES; WAR CRIMES.)

FILMS OF 1949.—*School in Cologne* (British Information Services).
(D. A. SN.)

Education.—British and U.S. zones (1947): elementary and secondary schools 27,077, teachers 115,658, pupils 6,896,861; French zone, including the Saar (1948): elementary and secondary schools 5,861, teachers 16,781, pupils 951,450. Universities, U.S., British, French zones (1948), 16, teaching staff 3,377, students 71,672. Universities, soviet zone (1948), 5, teaching staff 671, students 12,269.

Finance.—The first interim budget of western Germany covering Sept. 21, 1949–March 31, 1950, totalled about 1,534,000,000 DM. The estimated 1950–51 budget for the German Federal Republic was: revenue 8,000,000,000 DM., expenditure 10,100,000,000 DM., including 4,535,000,000 DM. for occupation costs. Note circulation, mid-Sept. 1949, 7,279,000,000 DM. The unofficial conversion factor fixed the deutschemark before Sept. 28, 1949, at 30 cents U.S., and after that date at 23.8 cents U.S. Note circulation in eastern Germany was estimated in Feb. 1949 at 4,112,000,000 OM. (ostmarks). The free, and unofficial, exchange rate in Sept. 1949 was 1 DM.=5.70 OM. Officially, no exchange rate was reached. In eastern Germany the 1950 budget estimates were as follows: revenue 17,630,000,000 DM., expenditure 17,526,000,000 DM.—an expansion of 10% in comparison with 1949.

Foreign Trade.—British and U.S. zones (1948): imports 3,164,000,000 DM., exports 1,817,000,000 DM.; (six months 1949): imports 3,051,000,000 DM., exports 1,756,000,000 DM. French zone (1948): imports 596,000,000 DM., exports 353,000,000 DM.

Agriculture.—Main crops, three western zones and Saar (1949): wheat 2,430,000 metric tons, rye 2,784,000 tons, barley 1,204,000 tons, oats 3,020,000 tons, potatoes 20,875,000 tons, sugar beets 4,035,000 tons. Soviet zone (1948): wheat 999,000 metric tons, rye 1,941,000 tons, barley 428,000 tons, oats 809,000 tons, potatoes 12,408,000 tons, sugar beets 4,583,000 tons. Livestock, western zones and Saar (Dec. 1948): cattle 10,320,000, pigs 5,616,000, sheep 2,362,000, horses 1,577,000, poultry 25,088,000. Soviet zone (Dec. 1948): cattle 3,202,000, pigs 2,100,000, sheep 780,000, horses 570,000.

Industry.—Western Germany, excluding the Saar (1949 est.): coal 103,000,000 metric tons; crude oil 760,000 tons; electricity 44,000,000,000 kw.hr.; gas 8,100,000,000 cu.m.; steel 9,000,000 tons; cement 8,500,000 tons; motor cars (passenger) 80,000, trucks 50,000; cotton yarn 230,000 tons; wool yarn 60,000 tons; synthetic fibres 110,000 tons. In Nov. 1949 the index of industrial production in western Germany was at 98% of the 1936 level. No precise statistical information was available for eastern Germany, but total production was estimated at about 55% to 60% of the 1936 level.
(K. SM.)

Giauque, William Francis (1895–), U.S. physical chemist and Nobel prize winner, was born in Niagara Falls, Ontario, Can., on May 12. He was graduated from and became an instructor in chemistry at the University of California, where he was made professor of chemistry in 1934. A specialist in low-temperature research, he shared the Pacific division prize of the American Association for the Advancement of Science (with H. L. Johnston in 1929) for the discovery of two isotopes of oxygen. In 1936 he received the Chandler medal from Columbia university and in

1937 the Elliott Cresson medal from the Franklin institute for the discovery of methods for producing temperatures near absolute zero. During World War II he was engaged in research work, much of it still unrevealed in 1949, for the U.S. government. He received the Nobel prize for chemistry in 1949 for studies of the magnetic and physical properties of substances under conditions approaching absolute zero.

G. I. Bill of Rights: *see* VETERANS' ADMINISTRATION (U.S.).

Gibraltar. A British fortress colony, Gibraltar is situated on a narrow peninsula covering the western outlet of the Mediterranean sea. Area: 2.12 sq.mi. Pop. (Dec. 31, 1948): 23,700. Governor: Lieut. Gen. Sir Kenneth Anderson.

History.—The United Kingdom government's decision not to create a legislative council, announced in July 1948, was rescinded; and the terms were published in Aug. 1949 of a new constitution providing for a legislative council consisting of the governor as president, three ex-officio, two nominated (of whom both may, and one must, be an official) and five elected members.

In the late summer strong protests were raised against an expenditure of £2,250,000 incurred on the erection of 472 flats under a housing scheme sponsored by the United Kingdom government and which, it was claimed, could have been built far more cheaply with local labour. Linked with these protests were others against an increase on the duty on coffee from Aug. 2 and against a proposed new trades tax due to operate from Jan. 1950.

A delegation from the chamber of commerce visited England to lay the local case before the secretary of state for the colonies.

It was decided to end the wartime evacuation scheme by the end of the year; evacuees from Gibraltar who were still in Britain could apply for repatriation at government expense up to that date.

Finance.—Currency: pound sterling, with United Kingdom coinage and local government notes. Budget (1948): revenue £681,580; expenditure £652,755. (JO. A. HN.)

Gilbert and Ellice Islands Colony: *see* PACIFIC ISLANDS, BRITISH.

Ginger: *see* SPICES.

Girl Scouts. Service and international friendship were keynotes in the work of the Girl Scouts of the U.S.A. during 1949.

More than 1,000,000 Girl Scouts between the ages of 7 and 17, in communities of all sizes throughout the United States, took part in a variety of projects carrying out the promise "to help other people at all times." Among the activities were: co-operation in local health and welfare drives; aid to the community chest and other voluntary agencies; and the performance of special duties in hospitals, child care centres, libraries and museums. Particular emphasis was placed on conservation of natural resources. Girl Scout troops worked closely with state or local forestry services and agricultural bureaus. Many of the summer camps owned by Girl Scout councils had been posted as wildlife sanctuaries.

From July 19 through Aug. 12, U.S. Girl Scouts were hostesses at a western hemisphere encampment in Manistee National forest near Muskegon, Mich. The 83 campers included Girl Scouts representing every region, territory and possession of the United States, as well as Girl Guides from Canada, Colombia, Curaçao, Ecuador, El Salvador, Guatemala, Haiti, Jamaica and Trinidad. Other international events of the summer in which U.S. Girl Scouts took part were: an encampment in Sweden; a conference in Switzerland; across-the-border camps which several Girl Scout troops from the northern states shared with Canadian Girl Guides; and a new foreign service experiment, which enabled 13 Senior Girl Scouts and assistant troop leaders to work as camp counsellors in France, Great Britain and the Netherlands.

The Girl Scouts held their 13th national convention in Milwaukee, Wis., Nov. 15–18. Approximately 5,000 adults were present. A new international service project, to be known as "Schoolmates Overseas," was announced for 1950. Every Girl Scout troop would be expected to make and fill at least one schoolbag for the children of other lands who needed pencils, paper and other supplies.

The semiannual registration count of June 30, 1949, showed a total membership of 1,436,529. This number included 446,163 Brownie Scouts, aged 7 through 9; 611,622 Intermediate Girl Scouts, aged 10 through 13; 54,348 Senior Girl Scouts, aged 14 through 17; 323,331 adult volunteers; and 1,065 local professional workers. Girl Scout national headquarters are at 155 E. 44th St., New York 17, N.Y. (C. M. R.)

Girl Guides.—New appointments during 1949 were headed by that of Princess Margaret as Sea Ranger commodore, thus extending her connection with the movement to which she had belonged since 1937. Lady Stratheden and Campbell was appointed chief commissioner, imperial headquarters, in place of Finola Lady Somers, and the Viscountess Colville of Culross succeeded Mrs. Stewart of Murdostoun as chief commissioner for Scotland.

Numbers showed an increase of 5,000 Brownies and Girl Guides; the total membership in Great Britain stood at 445,000, and the world total at 2,500,000. The Guide club, for adult members of the movement, was opened at 46 Belgrave square, London, and was honoured by a visit from Queen Elizabeth. For the first time all members of the movement were asked to contribute a penny a week to headquarters' funds in order that headquarters could give the maximum amount of help to its members.

British guides again travelled widely to camps and international conferences, and a party from Great Britain attended the Swedish national camp. Great Britain acted as hostess country to the conference for extension guiders (those working with handicapped children), which was attended by delegates from 16 countries. (B. PL.)

Glands: *see* ENDOCRINOLOGY.

Glass. The slight recession in manufacturing in the United States during the early months of 1949 caused a decline in the production of all kinds of glassware. Later in the year, however, demand increased. Flat glass, made in 34 establishments, was produced in large volume. The automobile industry required unprecedented amounts of plate glass for its approximately 6,000,000 new cars. The building industry was active, and production of window glass reached a high level.

The production of glass containers fell off 10% from the previous year, reaching a total of 90,000,000 gross. These were made in 87 factories, employing about 45,000 people and using 4,000,000 tons of raw materials. Pressed and blown glassware was made in 125 different establishments employing 40,000 persons. Tumblers made on automatic machines numbered 50,000,000 dozen. An equal number of pieces of table, kitchen and household glassware were produced. The total value of all glass products was somewhat less than in 1948, but it exceeded $600,000,000. To this figure should be added the value of products made from purchased glass, including such items as mirrors, cut glass and articles made from tubing, which reached a total value of $200,000,000.

Numerous patents were issued in this field. Improvements were made in methods of drawing sheet glass, of drawing tubing and in feeding gobs of glass to automatic machines. Ribbons of glass a few thousandths of an inch in thickness were successfully produced to serve as dielectric layers in small condensers. Glass tubes were made with diameters of less than 0.01 in.

Manufacture of television tubes for the first time passed the million mark. Formerly, these were all made from glass containing lead to provide adequate electrical resistance. New lead-free glasses were developed for this purpose, equally nonconducting. The United States, which had become completely self-sufficient in the field of optical glass, continued to produce it in adequate quantity and quality. The older names for the varieties of optical glass were virtually abandoned in favour of a numbering system. For example, a glass may be designated as 523:64, which refers to a glass having an index of refraction of 1.523 and a "nu" value or reciprocal of dispersive power of 64. (S. R. S.)

Gliding. Two Australian gliding records were established in 1949—a single-place distance record of 221 mi. by F. Hoinville on Jan. 11, and a two-place altitude record of 6,440 ft. by R. Roberts and E. Byrne on Feb. 26.

In the United States, J. Robinson set an international absolute altitude record by reaching 33,500 ft. in his glider "Zanonia" on Jan. 1. This altitude flight was the result of direct application of theoretical and practical knowledge of atmospheric waves.

The Soaring Society of America held its 16th national soaring contest at Elmira, N.Y., July 2–10. Twenty-six pilots flew under a completely new set of contest rules in which a set task such as goal, goal and return, straight line distance and speed was determined each day for all pilots by the contest board. A total of 5,381 mi. were flown; 19 flights ranged from 100 to 200 mi. and the longest flight was 205 mi. P. B. MacCready, Jr., flying the Orlik, earned the title of national soaring champion for the second consecutive time.

Another high performance sailplane became available to glider pilots during 1949 when the Civil Aeronautics administration approved the all-metal single-place Schweizer 1-23 for production.

On Feb. 4, 1949, the ministry of civil aviation in England issued new regulations affecting glider pilots. No licences would be required for noncommercial glider operations.

The Swedish national contest was held at Orebro, Swed., July 7–17. Eighteen pilots competed in the task flights set for each day, and a total of 8,848 mi. were flown. Thirty-four flights ranged from 100 to 200 mi. and four exceeded 200 mi. T. Lof, flying a Wiehe, was winner of the contest.

Three new French records were established. Mlle. M. Choisnet's duration flight on Nov. 17–19, 1948, of 35 hr. 3 min. was approved as official. E. Nessler soared 265 mi. with a passenger to establish a new French two-place record on July 25, 1949, and a new single-place goal-and-return French record was set by A. Lambert on the same day.

Several new sailplanes appeared on the continent during 1949. Two in France were produced by Castel Mauboussin—the C.M. 7, a tandem two-place sail-plane for all-round use, and the Jalon, a tandem two-place for research. In Hungary, the National Corporation for Sports Equipment, with E. Rubik in charge, produced Koma, a two-place training glider with folding wings.

In Canada T. R. Loudon of the University of Toronto, Ont., supervised the design and construction of an advanced single-place trainer, the Loudon.

(B. Sk.)

Goitre: *see* Physiology.

Gold. So far as the long-run position of gold is concerned, the most important single development of 1949 was the wave of currency devaluations in September, which embraced the British pound sterling and the monetary units of 30 other nations. The primary purpose of this general readjustment was to establish more realistic relationships with the U.S. dollar, but an incidental result was to change greatly the price-cost situation in gold mining in the devaluing countries. Among them these areas account for roughly 80% of the world's gold production outside the Soviet Union. Devaluation had the effect of raising the price of the world's principal monetary metal by 10% in Canada; 14% in the Belgian Congo, and 44% in the Union of South Africa and other sterling countries.

Following a moderate expansion in each of the early postwar years, gold production showed an increase in 1949 of 1,000,000 fine oz. over 1948. Output for the principal producing countries (excluding the U.S.S.R.) totalled 23,800,000 oz. This was 2,600,000 higher than 1945, the postwar low, but fell 12,900,000 short of 1946, the year of record output.

With the widespread currency devaluations and the categorical declarations by the president of the United States and his secretary of the treasury that there would be no change in the official United States price of gold, hoarding of the metal in western Europe showed a declining tendency in 1949. As a result of these various developments, prices in the premium markets such as Alexandria, Egy., Bombay, Ind., Hong Kong, Paris, Fr., and Milan, It., subsided noticeably toward the end of the year. Another characteristic of the period was the trend toward removing restrictions in gold dealing in several areas. The most conspicuous case was Hong Kong, where the free market, abolished in April, was re-established three months later, in July, subject to certain requirements with respect to fineness.

So far as the distribution of the world's monetary reserves was concerned, the outstanding phenomenon of 1949 was a marked reduction in the flow of gold to the United States. The increase in U.S. stocks, through the end of November, was $227,000,000. This means that the United States absorbed approximately 27% of the new gold produced during the year.

Table I.—*Analysis of Changes in Gold Stock of United States*

(In millions of dollars)

Period	Gold stock at end of period	Increase in gold stock	Net gold import or export (—)	Ear-marked gold: decrease or increase (—)	Domestic gold production
1937	*12,760	1,502	1,585.5	—200.4	143.
1938	14,592	1,832	1,973.6	—333.5	148.
1939	17,800	3,208	3,574.2	—534.4	161.
1940	22,043	4,243	4,744.5	—644.7	170.
1941	22,761	718	982.4	—407.7	169.
1942	22,739	—23.0	315.7	—458.4	125.
1943	21,981	—757.9	68.9	—803.6	48.
1944	20,631	—1,349.8	—845.4	—459.8	35.
1945	20,083	—547.8	—106.3	—356.7	32.
1946	20,706	623.1	311.5	465.4	51.
1947	22,868	†2,162.1	1,866.3	210.0	75.
1948	24,399	1,530.4	1,680.4	—159.2	70.
1949—January	24,448	49.5	66.2	—2.7	3.
February	24,464	16.2	21.5	—22.2	3.
March	24,468	3.6	19.8	—16.7	5.
April	24,461	—6.5	13.6	—17.7	5.
May	24,511	49.7	9.5	37.8	5
June	24,637	126.1	6.9	121.6	5
July	24,705	67.3	131.1	—19.9	5
August	24,771	66.5	257.4	—208.5	6
September	24,728	—43.1	98.1	—154.8	6
October	24,688	—39.8	56.1	—89.1	[illegible]
November	‡24,626	‡—62.0	§	—63.9	
1949 Jan.–Nov.	‡24,626	‡227.5	¶680.2	‖—436.1	♀48

*Includes gold in the Inactive Account amounting to $1,228,000,000 on Dec. 31, 1937.
†Includes transfer of $687,500,000 gold subscription to the International Monetary fun
‡Preliminary.
§Not yet available.
‖Gold held under earmark at the federal reserve banks for foreign account, includin international institutions, amounted to $4,213,900,000 on Nov. 30, 1949. Gold under ea mark is not included in the gold stock of the United States.
¶10-mo. total. ♀9-mo. total.

(outside Russia). But in 1948 the United States absorbed lmost twice the amount the world produced and in 1947 more han three times the total. Taking the 16 years from 1934 to 949, inclusive, United States monetary stocks increased by $17,800,000,000 while the world's output of new gold amounted o $15,300,000,000. Gold and dollar holdings of the United Kingdom fell by $527,000,000 between Dec. 31, 1948, and Sept. 18, 949, the date of devaluation, but by the end of the year had ecovered $359,000,000 of this loss.

(E. H. Co.)

World Production.—The Russian output of gold was not reported, but was variously estimated at 6,000,000 to 7,000,000 oz. in 1947, increasing from 3,000,000 to 4,000,000 oz. in 1944. While data are otherwise fairly complete, the lack of a definite igure for an output of this size makes the totals subject to a certain degree of uncertainty. The countries listed in the following table account for 70% to 80% of the total output.

Table II.—*World Production of Gold (Refinery Production)*

(Thousands of fine ounces)

	1942	1943	1944	1945	1946	1947	1948
United States	3,583	1,381	1,022	929	1,462	2,165	2,025
Canada	4,841	3,651	2,923	2,697	2,833	3,070	3,525
Mexico	801	632	509	419	421	465	368
Central America	324	277	269	244	240	239	262
outh America	1,604	1,491	1,370	1,276	1,194	982	935
ndia	260	252	188	168	132	175	180
elgian Congo	500	439	364	341	331	308	300
Gold Coast	784	565	534	475	587	560	672
outhern Rhodesia	760	657	593	568	545	520	514
outh Africa	14,127	12,804	12,280	12,225	11,927	11,200	11,584
ustralia	1,154	751	657	657	824	938	890
Total (est.)	36,300	28,900	26,400	26,100	27,500	29,800	29,600

United States.—The mine production of gold in the United States advanced from the postwar low of 954,572 oz. in 1945 to ,109,185 oz. in 1947. Production dropped back to 2,014,257 oz. n 1948, and still further to 1,603,881 oz. in the first ten months of 1949.

Canada.—The recovery of gold production in Canada from he postwar slump was not interrupted, as it had been in the United States. Output advanced from the low of 2,696,727 oz. n 1945 to 3,070,221 oz. in 1947, 3,525,221 oz. in 1948 and ,648,171 oz. in the first eight months of 1949.

South Africa.—After a decline of 6%, the premier gold output of the world recovered from 11,200,281 oz. in 1947 to 11,84,849 oz. in 1948 and 7,777,747 oz. in the first eight months of 1949. (*See* also EXCHANGE CONTROL AND EXCHANGE RATES; MINERAL AND METAL PRODUCTION AND PRICES.) (G. A. Ro.)

Gold Coast: *see* BRITISH WEST AFRICA.

Golf. Sam Snead, Virginia-born professional who had been a headliner since he came to the big leagues in 1937 and 5-year-old Marlene Bauer, outstanding feminine prodigy of the airways, dominated the U.S. golf scene in 1949. Snead, unanimously adjudged one of the great natural swingers of all time, won the national Professional Golfers' association championship, he Western open and the Masters' invitation tournament. His only defection was in the United States Golf association open, where he made poor selection of a club at the rim of the 71st reen.

Miss Bauer easily won the girls' national and western junior ournaments, scored a number of major match victories over her elders, and reached the national women's semifinals in Philadelphia, where two stymies by Dot Kielty prevented her from eaching the title match.

Winners of the national open and women's titles, respectively, were Cary Middlecoff, a dentist from Memphis, Tenn., who had urned pro two years before after a promising amateur career nd Mrs. Dorothy Germain Porter, Philadelphia housewife and mother.

SAM SNEAD making an iron shot on the second hole of the national P.G.A. championship match in which he beat Johnny Palmer at Richmond, Va., May 31, 1949

The national amateur champion for 1949 was Charles Coe of Ardmore, Okla., who bore out earlier predictions about his prowess by decisively beating Rufus King of Texas in the final bout at Rochester, N.Y. Ken Townes of Los Angeles won the national public links crown, and Harvie Ward of Tarboro, N.C., took the national intercollegiate championship.

The United States scored two important international team victories. After being down in the foursomes of the Ryder cup play in Ganton, England, the Americans took six out of eight singles matches to retain by a 7 to 5 count the trophy they had held since 1935. The U.S. Walker cup team routed a visiting British squad at New York's Winged Foot club by 10 to 2, marking the 11th U.S. triumph in 12 meetings with the Britons.

The Western Golf association continued its Evans Caddie Scholars' foundation, a plan designed to give deserving caddies college educations. Fifty-eight boys who were beneficiaries of the foundation were attending 19 colleges and universities throughout the country during 1949. Bing Crosby, one of the directors of the W.G.A., was voted recipient of the W. D. Richardson trophy by members of the Golf Writers' Association of America for the year's outstanding contribution to golf.

The Women's Western Golf association also continued to be a prominent factor in United States golf. Louise Suggs won the W.W.G.A. open and Helen Sigel of Philadelphia became the first easterner to take the association's amateur title.

Outstanding absentee of the 1949 season, but very much in the minds of golf fans throughout the world, was Ben Hogan, the Texan who preceded Snead as Professional Golfer of the Year. Almost fatally injured in an automobile crash in February, Hogan came back to fulfil his role as nonplaying captain of the U.S. Ryder cup team on its tour of England.

The United States Golf association, governing body of the game in the United States, reported a net increase in club membership of 644, raising the association's total club roster to

1,395. A total of 5,511 entrants turned out for qualifying rounds and competition proper in the six events conducted by the U.S.G.A. The association also showed a profit for the first time in three years. (C. BT.)

Great Britain.—In 1949 the Walker and Ryder cup matches both proved disastrous for Great Britain—so much so, indeed, as to lead to discussion about whether it was worth while continuing them. Each had been won by the British in Great Britain, although not since World War II, but the form of 1949 led to the belief that the gap between the golfers of Great Britain and the United States was, if anything, widening.

England won the men's international series and also beat France.

The open championship was won at Sandwich by the South African, Bobby Locke—his first "open" success. He had first tied with Harry Bradshaw, of Ireland, at 283, equalling the record aggregate first set by Gene Sarazen on the adjacent links of Prince's in 1933. His play in the replay, which he won with 135 to 147, was the outstanding exhibition of 1949. It was held by some that Bradshaw lost the championship when his ball lodged in the broken half of a discarded beer bottle and he wasted a stroke in getting it out. Such a contingency was later provided for in the new rules passed at the business meeting of the Royal and Ancient in September, to take effect on Jan. 1, 1950. H. Bradshaw later won the Irish open, beating Locke in the process. The Irish open amateur title was won by W. O'Sullivan on his home course at the Killarney Golf and Fishing club.

The amateur championship, the decision to play which in the republic of Ireland gave rise to criticism, was won at Portmarnock by S. McCready, of Belfast, who entered from Sunningdale. He beat the holder, Frank Stranahan (U.S.), and in the final another past holder from the United States, Willie Turnesa. In the first round of the final McCready holed the course in 70 to be 4 up. One down with 4 to play he won the next three holes for the match.

Despite this the outstanding amateur golfer of the year was R. White, of Southport, who won the English championship (beating Charles Stowe in the final at Formby), the *Daily Telegraph* foursomes (in partnership with Reginald Horne at Moortown) and both his matches in the Walker cup. The Brabazon trophy at Stoneham was won by P. Hine, a 17-year-old boy, with 287.

The women's title went to Bunty Stephens at Harlech, where two of the strongest United States women players failed. She beat Mrs. V. Reddan, Ireland, in the final. Later Miss Stephens made unsuccessful bids for the United States amateur and open titles. Mrs. A. C. Critchley (Diana Fishwick) was lured from semiretirement to win the English women's title at Burnham and Berrow.

Among the professionals M. Faulkner won three tournaments, R. Burton two and T. Haliburton, S. King and F. Daly one each. D. Rees, after a dull period, won the match play championship by one hole after a thrilling final at Walton Heath with H. Cotton, who had in turn defeated two United States Ryder cup men, L. Mangrum and J. Palmer, on the same day. The outstanding professional was undoubtedly Charles Ward, who happened also to be the smallest. He won the Masters tournament and two others and for the second year running headed the averages, thus winning the Vardon Trophy.

(H. Lo.)

Gonorrhoea: *see* VENEREAL DISEASES.

González Videla, Gabriel

(1898–), president of Chile, was born on Nov. 23 at La Serena, Coquimbo. He studied law at Catholic university, Santiago, thought he was interested in politics and after receiving his degree in 1923 began the practice of law. In 1937 he helped to form the popular-front coalition that elected th liberal Pedro Aguirre Cerda to the presidency, and in 1939 Ganzález Videla was sent to France as ambassador. He returned to Chile in 1942. On Sept. 4, 1946, as Radical party candidate, backed by left-wing elements, he won the largest popular vote in the race for the presidency, though the congress had to confirm his election because he had not received a clear majority. He was inaugurated on Nov. 3, 1946.

Though initially supported by left-wing elements, his presidency was marked by a progressive withdrawal from these elements. In April 1948, his government charged that Communists had plotted to assassinate him and stage a revolt, and in June the Communist party was outlawed.

In the congressional elections of March 6, 1949, his supporters won two-thirds of the seats in the chamber of deputies and 2 seats in the senate.

Government Departments and Bureaus.

The following are the leading officers of the more important government departments and bureaus of the United States The date for the information is Dec. 31, 1949.

Department or Bureau	Name	Post
Department of State	*Acheson, Dean G.	Secretary
	Webb, James E.	Under-Sec'y
	Kennan, George F.	Counselor
	McFall, Jack K.	Asst. Sec'y
	Allen, George V.	Asst. Sec'y
	Thorp, Willard L.	Asst. Sec'y
	Hickerson, John D.	Asst. Sec'y
	McGhee, George C.	Asst. Sec'y
	Miller, Edward G., Jr.	Asst. Sec'y
	Perkins, George W.	Asst. Sec'y
	Butterworth, W. Walton	Asst. Sec'y
Department of the Treasury	*Snyder, John W.	Secretary
	Foley, Edward H., Jr.	Under-Sec'y
Office of the Comptroller of the Currency	Delano, Preston	Comptroller
Treasurer of the U.S.	*Clark, Mrs. Georgia Neese	Treasurer
Bureau of Customs	Dow, Frank	Commissioner
Bureau of Internal Revenue	Schoeneman, George J.	Commissioner
Bureau of Narcotics	Anslinger, Harry J.	Commissioner
Bureau of the Mint	Ross, Mrs. Nellie Tayloe	Director
U.S. Savings Bonds Division	Clark, Vernon L.	Nat'l Director
*U.S. Coast Guard	Farley, Joseph F., Adm.[1]	Commandant
Department of Defense	*Johnson, Louis A.	Sec'y of Defense
Joint Chiefs of Staff	*Bradley, Omar N., Gen.	Chairman
	Collins, J. Lawton, Gen.	
	*Sherman, Forrest P., Adm.	
	*Vandenberg, Hoyt S., Gen.	
Armed Forces Policy Council	*Johnson, Louis A.	Chairman
Munitions Board	Howard, Hubert E.[2]	Chairman
Research and Development Board	Vacancy	Chairman
Military Liason Committee	LeBaron, Robert	Chairman
Department of the Army	*Gray, Gordon	Secretary
	Voorhees, Tracy S.	Under-Sec'y
Chief of Staff	Collins, J. Lawton, Gen.	Chief
Women's Army Corps	Hallaren, Mary A., Col.	Director
Department of the Navy	*Matthews, Francis P.	Secretary
	Kimball, Dan A.	Under-Sec'y
Chief of Naval Operations	*Sherman, Forrest P., Adm.	Chief
Asst. for Women, Bureau of Naval Personnel	Hancock, Joy B., Capt.	Asst. for Women
*U.S. Marine Corps	Cates, Clifton B., Gen.	Commandant
Women Marines	Towle, Katherine A., Col.	Director
Department of the Air Force	*Symington, W. Stuart	Secretary
	Barrows, Arthur S.	Under-Sec'y
Chief of Staff	*Vandenberg, Hoyt S., Gen.	Chief
Women in the Air Force	May, Geraldine P., Col.	Director
Department of Justice	*McGrath, J. Howard	Att'y-Gen.
Solicitor General	Perlman, Philip B.	Solic. Gen.
*Federal Bureau of Investigation	Hoover, J. Edgar	Director
Bureau of Prisons	Bennett, James V.	Director
Immigration and Naturalization Service	Miller, Watson B.	Commissioner
*Post Office Department	Donaldson, Jesse M.	Postmaster Gen.
Department of the Interior	*Chapman, Oscar L.	Secretary
Bureau of Land Management	Clawson, Marion	Director
Bureau of Indian Affairs	Nichols, John R.	Commissioner
Geological Survey	Wrather, William E.	Director
Fish and Wildlife Service	Day, Albert M.	Director
Bureau of Reclamation	Straus, Michael W.	Commissioner
*National Park Service	Drury, Newton B.	Director
Bureau of Mines	Boyd, James	Director
Division of Territories and Island Possessions	Davis, James P.	Director
Department of Agriculture	*Brannan, Charles F.	Secretary
	Loveland, Albert J.	Under-Sec'y
*Agricultural Research Administration	Cardon, Philip V.	Administrator
Bureau of Agricultural and Industrial Chemistry	Hilbert, G. E.	Chief
Bureau of Animal Industry	Simms, Bennett T.	Chief
Bureau of Dairy Industry	Reed, O. E.	Chief

Department or Bureau	Name	Post
ureau of Entomology and Plant Quarantine	Annand, P. N.	Chief
ureau of Human Nutrition and Home Economics	Stiebeling, Hazel K.	Chief
ureau of Plant Industry, Soils and Agricultural Engineering	Salter, Robert M.	Chief
ffice of Experiment Stations	Trullinger, R. W.	Chief
ureau of Agricultural Economics	Wells, O. V.	Chief
ommodity Credit Corporation	Trigg, Ralph S.	President
xtension Service	Wilson, M. L.	Director
Farm Credit Administration	Duggan, Ivy W.	Governor
Farmers Home Administration	Lasseter, Dillard B.	Administrator
ederal Crop Insurance Corporation	Geissler, Gus F.	Manager
Forest Service	Watts, Lyle F.	Chief
ffice of Foreign Agricultural Relations	Andrews, Stanley	Director
roduction and Marketing Administration	Trigg, Ralph S.	Administrator
Rural Electrification Administration	Wickard, Claude R.	Administrator
oil Conservation Service	Bennett, Hugh H.	Chief
artment of Commerce	*Sawyer, Charles	Secretary
	Whitney, C. V.	Under-Sec'y
ureau of the Census	Hauser, Philip M.	Acting Director
ureau of Foreign and Domestic Commerce	Blaisdell, Thomas C., Jr.	Asst. Sec'y in chg.
ational Bureau of Standards	Condon, E. U.	Director
oast and Geodetic Survey	Colbert, Leo O.	Director
nland Waterways Corporation	Ingersoll, A. C., Jr.	President
ivil Aeronautics Administration	Rentzel, Delos W.	Administrator
atent Office	Marzall, John A.	Commissioner
Veather Bureau	Reichelderfer, Francis W.	Chief
ureau of Public Roads	MacDonald, Thomas H.	Commissioner
artment of Labor	*Tobin, Maurice J.	Secretary
	Galvin, Michael J.	Under-Sec'y
ureau of Labor Statistics	Clague, Ewan	Commissioner
ureau of Apprenticeship	Patterson, William F.	Director
Vomen's Bureau	Miller, Frieda S.	Director
ureau of Labor Standards	Connolly, William L.	Director
Vage and Hour and Public Contracts Divisions	McComb, William R.	Administrator
ureau of Employment Security	Goodwin, Robert C.	Director
ependent Offices		
tomic Energy Commission	*Lilienthal, David E.	Chairman
ivil Aeronautics Board	O'Connell, Joseph J., Jr.	Chairman
xport-Import Bank of Washington	Gaston, Herbert E.	President
ederal Communications Commission	Coy, Wayne	Chairman
ederal Deposit Insurance Corporation	Harl, Maple T.	Chairman
ederal Mediation and Conciliation Service	Ching, Cyrus S.	Director
ederal Power Commission	Smith, Nelson Lee	Chairman
ederal Reserve System, Board of Governors of the	McCabe, Thomas B.	Chairman
ederal Security Agency	Ewing, Oscar R.	Administrator
U.S. Office of Education	McGrath, Earl J.	Commissioner
U.S. Public Health Service	Scheele, Leonard A.	Surgeon General
*Social Security Administration	Altmeyer, Arthur J.	Commissioner
Office of Special Services	Belsley, G. Lyle	Commissioner
Bureau of Employees' Compensation	McCauley, William	Director
Food and Drug Administration	Dunbar, Paul B.	Commissioner
*Office of Vocational Rehabilitation	Shortley, Michael J.	Director
ederal Trade Commission	Mason, Lowell B.	Acting Chairman
eneral Accounting Office	Warren, Lindsay C.	Comptroller General
eneral Services Administration	Larson, Jess	Administrator
Public Buildings Service	Reynolds, W. E.	Commissioner
Community Facilities Service	Seward, Pere F.	Commissioner
ational Archives and Records Service	Grover, Wayne C.	Archivist
ederal Supply Service	Mack, Clifton E.	Commissioner
overnment Printing Office	Deviny, John J.	Public Printer
ousing and Home Finance Agency	Foley, Raymond M.	Administrator
Home Loan Bank Board	Divers, William K.	Chairman
Federal Housing Administration	Richards, Franklin D.	Commissioner
Public Housing Administration	Egan, John Taylor	Commissioner
dian Claims Commission	Witt, Edgar E.	Chief Commissioner
terstate Commerce Commission	Mahaffie, Charles D.[3]	Chairman
ibrary of Congress	Evans, Luther H.	Librarian
ational Advisory Committee for Aeronautics	Hunsaker, Jerome C.	Chairman
ational Capital Park and Planning Commission	Wurster, William W.	Chairman
ational Labor Relations Board	Herzog, Paul M.	Chairman
ational Mediation Board	O'Neill, Francis A., Jr.	Chairman
ailroad Retirement Board	Kennedy, William J.	Chairman
econstruction Finance Corporation	Hise, Harley	Chairman
Federal National Mortgage Association	Hise, Harley	Chairman
ecurities and Exchange Commission	McDonald, Harry A.	Chairman
elective Service System	Hershey, Lewis B., Maj. Gen.	Director
mithsonian Institution	Wetmore, Alexander	Secretary
ax Court of the United States	Kern, John W.	Presiding Judge
ennessee Valley Authority	Clapp, Gordon R.	Chairman
.S. Civil Service Commission	Mitchell, Harry B.	Chairman
Fair Employment Board	Moffett, Guy	Chairman
Loyalty Review Board	Richardson, Seth W.	Chairman
.S. Maritime Commission	Fleming, Philip B., Maj. Gen.	Chairman
.S. Tariff Commission	Ryder, Oscar B.	Chairman
eterans' Administration	Gray, Carl R., Jr.	Administrator
cutive Office of the President		
ureau of the Budget	Pace, Frank, Jr.	Director
ouncil of Economic Advisers	Keyserling, Leon H.	Acting Chairman
ational Security Council	Souers, Sidney W.[4]	Executive Sec'y
Central Intelligence Agency	Hillenkoetter, Roscoe, H., Rear Adm.	Director
ational Security Resources Board	Steelman, John R.	Acting Chairman
Emergency Agencies		
Displaced Persons Commission	Carusi, Ugo	Chairman
Economic Cooperation Administration	*Hoffman, Paul G.	Administrator
Office of Housing Expediter	Woods, Tighe E.	Housing Expediter
War Claims Commission	Cleary, Daniel F.	Chairman
Quasi-Official Agencies		
*American National Red Cross	Marshall, George C., Gen.	President
†National Academy of Sciences and National Research Council	Richards, Alfred N.	President, National Academy of Sciences
	Bronk, Detlev W.	Chairman, National Research Council
Public International Organizations		
Food and Agriculture Organization	Dodd, Norris E.	Director General
*International Bank for Reconstruction and Development	Black, Eugene R.	President
*International Labor Organization	Morse, David A.	Director General
International Refugee Organization	Tuck, W. Hallam	Director General
*Organization of American States	Lleras, Alberto	Sec'y Gen.
*United Nations	*Lie, Trygve	Sec'y Gen.

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*See separate article.

†See *Societies and Associations.*

[1] Succeeded by Vice Adm. Merlin O'Neill, effective Jan. 1, 1950.

[2] Interim appointment.

[3] Succeeded by J. Monroe Johnson, effective Jan. 1, 1950.

[4] Succeeded by James S. Lay, Jr., effective Jan. 15, 1950.

Great Britain.—His majesty's chief officers of state and the permanent officials of the more important of the government departments of Great Britain at the close of 1949 were these:

Ministry or Department	Name	Post
Admiralty, Board of	Hall, Viscount	First Lord
	Lang, Sir John G.	Permanent Secretary
Agriculture and Fisheries, Ministry of	Williams, Tom	Minister
	Vandepeer, Sir Donald	Permanent Secretary
Air Ministry	Henderson, Arthur	Secretary of State
	Barnes, Sir James H.	Perm'nt Under-Sec'y
*Bank of England	Cobbold, C. F.	Governor
	Nevill, W. H.	Secretary
Cabinet Office	Brook, Sir Norman	Perm'nt Sec'y and Sec'y of the Cabinet
Central Land Board and War Damage Commission	Phillips, Sir Thomas	Chairman
Civil Aviation, Ministry of	Pakenham, Lord	Minister
	Overton, Sir Arnold	Permanent Secretary
Civil Service Commission	Waterfield, Sir Percival	First Commissioner
Colonial Office	Jones, Arthur Creech	Secretary of State
	Lloyd, Sir Thomas	Perm'nt Under-Sec'y
	Calder, Sir John Alex. Downie, Harold	Crown Agents
Commonwealth Relations Office	Noel-Baker, Philip	Secretary of State
	Leisching, Sir Percivale	Perm'nt Under-Sec'y
Customs and Excise, Board of	Croft, Sir William	Chairman
Defence, Ministry of	Alexander, Albert V.	Minister
	Parker, Sir Harold	Permanent Secretary
Duchy of Lancaster, Office of the	Dalton, Hugh	Chancellor
Education, Ministry of	Tomlinson, George	Minister
	Maud, Sir John	Permanent Secretary
Food, Ministry of	Strachey, John	Minister
	Lee, F. G.	Permanent Secretary
Foreign Office	*Bevin, Ernest	Secretary of State
	Strang, Sir William	Perm'nt Under-Sec'y
Forestry Commission	Robinson, Lord	Chairman
Fuel and Power, Ministry of	Gaitskell, Hugh T. N.	Minister
	Fergusson, Sir Donald	Secretary
Health, Ministry of	Bevan, Aneurin	Minister
	Douglas, Sir William	Secretary
Health, Welsh Board of	Crawshay, G. C. H.	Chairman
Home Office	Ede, James Chuter	Secretary of State
	Newsam, Sir Frank	Perm'nt Under-Sec'y
Information, Central Office of	Fraser, Sir Robert	Director General
Inland Revenue, Board of	Bamford, Sir Eric	Chairman
Labour and National Service, Ministry of	Isaacs, George	Minister
	Ince, Sir Godfrey	Permanent Secretary
Law Officers' Department	Shawcross, Sir Hartley	Attorney-General
	Soskice, Sir Frank	Solicitor-General
Lord High Chancellor's Department	Jowitt, Viscount	Lord High Chancellor
	Napier, Sir Albert	Permanent Secretary
Lord Privy Seal	Addison, Viscount	
National Assistance Board	Buchanan, George	Chairman
	Fieldhouse, Sir Harold	Secretary
National Insurance, Ministry of	Griffiths, James	Minister
	Hancock, Sir Henry	Permanent Secretary
Paymaster-General	Macdonald of Gwaenysgor, Lord	
Pensions, Ministry of	Marquand, Hilary A.	Minister
	Wilson, Sir Arton	Permanent Secretary
*Post Office	Paling, Wilfred	Postmaster General
	Little, Rudolf Alexander	Director General
Privy Council Office	Morrison, Herbert	Lord President
	Leadbitter, Sir Eric C. E.	Clerk
Scientific and Industrial Research, Department of	Lockspeiser, Sir Ben	Secretary

Ministry or Department	Name	Post
Scottish Office	Woodburn, Arthur	Secretary of State
	Milne, Sir David	Perm'nt Under-Sec'y
Stationery Office	Welch, H. G. G.	Controller
Supply, Ministry of	Strauss, George Russell	Minister
	Rowlands, Sir Archibald	Permanent Secretary
Town and Country Planning, Ministry of	Silkin, Lewis	Minister
	Sheepshanks, Sir Thomas	Permanent Secretary
Trade, Board of	Wilson, James	President
	Woods, Sir John	Permanent Secretary
Transport, Ministry of	Barnes, Alfred	Minister
	Jenkins, Sir Gilmour	Permanent Secretary
Treasury	*Attlee, Clement	First Lord
	*Cripps, Sir Stafford	Chancellor of the Exchequer
	Bridges, Sir Edward	Permanent Secretary
War Works Commission	Phillips, Sir Thomas	Chairman
War Office	Shinwell, Emanuel	Secretary of State
	Turner, Sir George	Perm'nt Under-Sec'y
Works, Ministry of	Key, Charles	Minister
	Emmerson, Sir Harold	Permanent Secretary

*See separate article.

Grain: *see* BARLEY; CORN; OATS; RICE; RYE; WHEAT.

Grapefruit: *see* FRUIT.

Grapes: *see* FRUIT.

Gray, Gordon

(1909–), U.S. government official, was born on May 30 in Baltimore, Md., was graduated from the University of North Carolina, Chapel Hill, in 1930 and took his law degree in 1933 at Yale university. In 1937 he purchased the two newspapers being published in Winston-Salem, N.C., as well as the local radio station, and was a successful publisher for ten years. In 1938 he was elected to the North Carolina senate, from which he resigned in 1942 to enlist in the army. He was commissioned a lieutenant at the Infantry school, Fort Benning, Ga., served on the staff of Gen. Omar N. Bradley, and was demobilized with the rank of captain. In 1946 he was again elected to the North Carolina senate, serving until Sept. 23, 1947, when he was appointed assistant secretary of the army. He was chairman of an interservice committee that recommended that the national guard should be removed from control of the states and placed in the army reserve forces—a recommendation still pending in 1949. On the resignation of Secretary of the Army Kenneth C. Royall, April 21, 1949, Gray became acting secretary, and was named secretary of the army on June 7.

Great Books: *see* EDUCATION; LIBRARIES.

Great Britain & Northern Ireland, United Kingdom of.

An independent kingdom in northwestern Europe, the United Kingdom comprises the main island of Great Britain, with numerous smaller islands off the English and Scottish coasts, and the six northeastern counties of Ireland. It is a constitutional monarchy, with a king and parliament of two houses, the house of lords consisting of 3 peers of the blood royal, of 704 dukes, marquesses, earls and barons (Aug. 1949), 26 spiritual peers (2 archbishops and 24 bishops), 16 Scottish representative peers, a number of Irish representative peers (in 1949, 7; vacancies no longer filled) and a few life peers who have held high judicial office; and the house of commons, numbering 640 members, elected by universal suffrage. Areas and populations of the component parts of the United Kingdom were:

	Area (in sq.mi.)	Population (June 30, 1948, est.)
England, together with Channel Islands and the Isle of Man	50,623	43,676,000*
Wales, including Monmouthshire	8,012	
Scotland	29,794	5,172,000
Great Britain	88,429	48,848,000
Northern Ireland	5,238	1,365,000
United Kingdom	93,667	50,213,000

*Wales: pop. (1948 est.) 2,523,000.

Cap.: London (*q.v.*) (pop., est. June 30, 1948): city and metropolitan police districts 8,367,000; city and metropolitan boroughs only 3,402,400. Chief towns (est. June 30, 1948, if no otherwise stated): Glasgow (est. Dec. 31, 1947) 1,106,000 Birmingham 1,099,850; Liverpool 767,990; Manchester 697,540 Sheffield 512,110; Leeds 497,340; Edinburgh (est. Dec. 31 1947) 487,300; Belfast (Jan. 1, 1939) 443,500; Bristol 435,510 Nottingham 297,310; Hull 294,070; Newcastle-on-Tyne 292,890 Leicester 280,550. Language: English is almost universall spoken, but in Wales (according to the 1931 census) 3% of th population spoke Welsh only and 31% spoke both languages; i Scotland 0.15% spoke Gaelic only and 2.7% spoke both languages; in the Isle of Man 528 spoke English and Manx. Religions: Church of England (nominal membership 15,000,000 effective 5,500,000); Roman Catholic Church (England, Wales Scotland and Northern Ireland, *c.* 3,500,000); Presbyteria established church in Scotland (1,600,000 in 1949); Church i Wales (est. 250,000); Methodists (1,500,000 in 1949); Jews (400,000). King: George VI (*q.v.*); prime minister and firs lord of the treasury: Clement R. Attlee (*q.v.*).

History.—To the great majority of the people of Grea Britain, 1949 presented a picture of calm. The number o people at work was extremely high; unemployment was so lo as to blunt the desire to look for new jobs. It was only towar the end of the year that signs of unemployment appeared in th shipbuilding and repairing trades. The hours of work done pe person per week differed hardly at all from the average in 1938 and with a huge labour force this made the output very high There were a number of strikes, but the total number of day lost in consequence was small; and the causes which set off th strikes lay in overeasy circumstances rather than in the presence of manifest wrongs to be righted. This applied, for example, to the so-called lodging turn strikes which occurre among a few railwaymen in June because footplate crews refused to spend the night away from their homes. More seriou were the dock strikes which ran along the coast from Liverpoo to London and lasted intermittently from April until July. Th go-slow movement at Smithfield was caused by the porter desire to prove that what seemed to be the modest amount o work they did in a week was in fact a full week's work. (*Se* also STRIKES.)

Some of these movements—particularly that among th dockers—were fomented by Communists. But their success wa too slight to trouble the generally tranquil picture of the country as a whole. There had been warnings. In March the Trade Union congress condemned the disruptive tactics of the Communists, and in April the prime minister gave a general warning against communism. Early in January Arthur Deakin, secretary of the Transport and General Workers' union, had claime to have knowledge of Communist plans to disrupt industry i August; but August turned out to be a quiet month. And th general good temper was further illustrated by the action of th railwaymen as a body. Rather unskilfully led, the railwayme put forward wage claims which British railways would hav been financially unable to meet. The claims were rejected b the Conciliation board. An attempt was thereupon made to ge a "work to rule" (*i.e.*, a slow motion) movement under way but it met with a heavy defeat. (*See* also LABOUR UNIONS.)

For a large proportion of the population conditions of li were in fact fairly comfortable. Some scarcities diminishe Early in the year clothes rationing was ended together wit other minor controls. The running of the important remainin controls grew smoother as experience suggested the adoption o appropriate devices for collaboration between the ministrie and industry. The cost of living was virtually unchanged. S were wage rates.

R STAFFORD CRIPPS, British chancellor of the exchequer, passing before rowd of silent Londoners in Sept. 1949, the day after his speech announcing valuation of the pound sterling from $4.03 to $2.80

Political life developed on normal lines. Parliamentary by-ections showed the pendulum swinging slowly toward the ght but the opposition gained no seats. Some analysts ob-rved especially that Liberal voters were sharing in the move-ent to the right. This movement was manifest also in the cal government elections held in April. As a general election as due at the latest in 1950 special attention was paid to the afting of party programs. The Labour party led the way, iblishing in April a policy statement which was adopted by the rty conference in June. Nationalization was proposed for in-istrial assurance, the cement industry, sugar refining and anufacturing, the wholesale meat trade and slaughterhouses, ld storage, water supply and all suitable minerals. The chemi-l industry was to be examined and a development centre was be set up for shipbuilding and repairing. Industries already tionalized were to be gradually decentralized and the "fruit-l partnership" between private and public industry was to be tended. Some controls were to stay, others to be removed.

Conservative policy was stated in July in a booklet called *he Right Road for Britain.* The nationalized industries were be decentralized but there was no mention of wholesale de-tionalization. Some important controls were to stay as long they were necessary. Direct taxation was to be reduced, ere were to be insurance and pension reliefs, and the social rvices were to be maintained, but waste was to be cut out.

As the year went on the government came to be more on the fensive. At the Trades Union congress conference at Brid-gton in September Attlee stressed the need for higher pro-iction and urged that an increase in wages for the lowest-paid workers should not involve consequential increases all along the line. On this point the unions did not see eye to eye with the government.

The Conservative party conference was held in London in October under the shadow of the devaluation crisis. It brought promises of support for any necessary sacrifices but did not produce a detailed program for meeting the emergency. The debate on the government's economy measures in connection with the dollar crisis showed that some Conservatives were ready for more drastic measures than those outlined in *The Right Road for Britain.*

By the end of 1949 the government had completed its major program of legislation. Its main objective now was the passing of the Iron and Steel bill and of the Parliament bill. In November the government agreed to delay the vesting day for the Iron and Steel industry until after the general election; and thus the bill reached the statute book without the application of a new Parliament act.

Economics and Finance.—The serene conditions of the domestic scene were spoilt by the fact that the entire structure was built on sand: the entire economic field was dominated by the issue between national solvency and insolvency. Supplementary estimates published in February showed that an additional £58,000,000 would be needed for the national health service and a further £52,000,000 for the ministry of food. The financial year ended on March 31 with a true surplus estimated at £352,000,000 and the new budget provided for one of no more than £14,000,000. It represented a success for the forces of solvency; for the chancellor kept the subsidies (designed to keep the cost of living at a moderate level) at £465,000,000, or £103,000,000 less than the rates ruling in the previous financial

BRITISH WOMEN SHOPPERS attracted by coupon-free lingerie at a London department store, after more than seven years of clothes rationing came to an end in Great Britain on March 14, 1949

year would have cost. (*See* BUDGET, NATIONAL.)

Nevertheless, it presently appeared that the state was still spending more than it was receiving. Expenditure soon rose to a rate suggesting that long before the end of the financial year the estimates would be exceeded; there was no similar indication for revenue. The public too was in no saving mood. Savings were drawn on at a net rate of nearly £2,000,000 a week, and the turnover of money (as measured, for example, by the figures of the provincial clearings) became more rapid.

Questions of internal solvency were overshadowed (despite the continued receipt of European Recovery program aid) by those relating to the balance of trade. In the second half of 1948 the country's overseas accounts showed a small surplus. In the second half of 1949 this trend was reversed. The trouble was that, though the over-all accounts balanced on paper, Great Britain (and the sterling area as a whole) was unable to balance its accounts with the dollar area. Though it had a surplus with the rest of the world the balances thus built up could not be used to pay for imports from the United States since many of Great Britain's debtors were themselves insolvent, so far as their foreign trade was concerned. British overseas trade policy was caught in a dilemma. If it concentrated on arranging two-sided trade treaties (as with Poland and the Argentine) it did nothing to foster the growth of world trade, without which British commerce cannot flourish; if it worked toward increasing the volume of world trade (as at the Brussels conference on the convertibility of currencies in June and at the Annecy conference on tariffs which ended in October) it ran the risk of financing the weaker countries' trade at its own expense. Officially, it was claimed that a solution of this contradiction existed; it was not apparent to the eye of the man in the street.

The flow of gold and dollars continued and after consultations at Washington, D.C., it was decided to devalue the pound on Sept. 18. The rate, which had stood at $4.03 to the pound after 1939, was lowered to $2.80. It was hoped that this cheapening of the pound would stimulate exports to, and discourage imports from, the dollar area. (*See* also INTERNATIONAL TRADE EUROPEAN RECOVERY PROGRAM; ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION.)

One powerful cause of the British trading difficulties lay i the high costs of production. Devaluation drew attention t this fact and consequently placed a question mark against th entire philosophy of the welfare state. The opposition therefore pressed for a general election; the government refused In late October the government outlined fiscal steps to correc the drift toward bankruptcy. They were, however, judged inadequate. The year ended with a widespread conviction tha more drastic decisions would have to be announced after if no before the coming general election. Nonpolitical observer suspected that the opposition was exaggerating and the government was belittling imminent dangers, the motive in each party being an electioneering one. (*See* also POLITICAL PARTIES BRITISH.)

Foreign Policy.—Foreign policy was dominated by relation with the U.S.S.R. and to this extent formed part of a join policy in which the United States held the leading part. Early in the year the success of the air lift supplying Berlin move the soviet government to agree to consultations, which, in May resulted in the restoration of the *status quo,* with a promise t convene the Council of Foreign Ministers (*q.v.*) to conside German questions. The council duly went through the form o joint consultations but nothing resulted. More important wer the western attempts to build up a security system designed i reality if not in name to contain soviet expansionism. The mos important measure under this heading was the North Atlanti treaty (*q.v.*).

The Council of Europe, of roughly parliamentary form, wa meant to express the element of supranational unity existing i Europe. Its assembly (or lower house) met at Strasbourg France, in August and September. It surprised many by providing evidence of solidarity: it kindled the imagination of th fairly large body of British public opinion which saw in th attempt to introduce a measure of unity into western Europ something more than a defensive instrument. (*See* EUROPEA UNION.)

Like the U.S. administration, the British government wa ready to take energetic action on its side of the "iron curtain to restrain whatever ambitions might animate soviet policy But the government was unable to devise effective action beyond the curtain. For example, both Great Britain and the U.S addressed protests early in April to Bulgaria, Hungary an Rumania on the score of their alleged violations of the peac treaties; but it was clear that this action was prompted rathe by the wish to keep the diplomatic record straight than by th hope of weakening the Communist front. A similar inability t work out an effective policy was shown later in the year whe Marshal Tito's breach with the U.S.S.R. became more and mor violent. The impulse to assist him was evidently tempered b the desire to take no irremediable step about the Soviet Unio

As for Germany, policy was hampered by the fact that, weak, the federal republic must be a drain on its victor-sponso and a possible breeding ground for communism; but, if stron it would sooner or later pursue an independent policy, and o not necessarily accommodated to the interests of the wester powers by any pre-established harmony. The program for se ting up a western German government was pushed ahead. Th British government played a proper part in fostering its crea tion. At the same time it was accused of showing itself unab to grasp the implications of this policy. The dismantling rman factories listed as potentially dangerous continued rough most of the year to the accompaniment of vocal prots and sometimes of physical violence on the part of the rmans. Toward the end of the year it became obvious that mantling would be a major issue for the west German oppoion and could not be disregarded by the administration. Probly the British government was not prompted solely by the r of the new Germany it was helping to build up; it would t wish to present the soviet government with a cut and dried se for contending that the former enemy was being treated as riend. (*See* also GERMANY; REPARATIONS.)

On the Soviet Union's eastern flank British policy was amguous. The Chinese Communists overran most of the coun, and it was obvious that theirs was the dominant power. In w of this fact, and of the desirability of maintaining comrcial relations, the government appeared anxious to recognize Communists. Public opinion, seizing on the striking and the ential, concentrated its attention on relations with the S.S.R. and extended to every manifestation of communism hostility to that power. There was a strong craving for reurance about the status of Great Britain. This showed itself the indignation aroused by the Communist shelling of the gate "Amethyst" on the Yangtze in April, and by the efferscent celebrations occasioned by the vessel's escape in July.

Commonwealth Affairs.—Intracommonwealth relations showed at evolutionary quality which is necessary for the healthy life any political body. With respect to India, for example, means re found for expressing the dominion's continued memberp of the commonwealth as well as its changed relationship to traditional bond of empire, the crown. After exploratory nversations between British envoys and the respective domin authorities, a commonwealth conference was held in London m April 21 to 28. A formula was found declaring that India cepted the king as the symbol of the free association of the nmonwealth's independent member nations but also affirming at India was to become a sovereign independent republic. is recognition of apparently conflicting principles was apoved by the other dominions. (*See* INDIA; PAKISTAN.)

An analogous reconciliation was effected by the Ireland bill, ich was published on May 5 and declared that the Republic Ireland ceased to be part of his majesty's dominions on ril 18 but would not be a foreign country for the purposes any law in force in the United Kingdom or the colonies. The l also affirmed that Northern Ireland remained part of the itish dominions. The measure had a bad reception in the public of Ireland as perpetuating the so-called partition. But correctly stated the facts of the situation. (*See* IRELAND, PUBLIC OF.)

In the colonial empire stress was placed on economic deopment. In the commons debate on July 29 Arthur Creech nes, the colonial secretary, showed that he understood the ed to build up a higher standard of living. The difficulty lay in shortage of capital in Great Britain; and a report issued on y 29 by the Parliamentary and Scientific committee suggested operation with the United States in dealing with the underveloped areas. The hazards of colonial development were strated by the history of the government's peanuts scheme. rly in November it was officially stated that more than £29,,000 had been spent on the undertaking. It was clear that, atever its ultimate fate might be, the project was a longm pioneering endeavour and exposed to all the difficulties erent in this kind of effort.

As the year advanced the financial difficulties of Great Britain l of the sterling area received growing attention. A conence of commonwealth finance ministers sat in London from y 13 to July 18. It expressed its appreciation of the need for a single many-sided system of world trade and payments and it discussed means for expanding the sterling area's earnings of dollars. The rate of the outflow of gold and dollars did in fact decline during the third quarter of the year. Equally important, within the sterling area, were the war debts owed by Great Britain to some of the dominions. In August arrangements were concluded with India and Pakistan governing releases of sterling to these creditors. If measured against the sums owed the releases were moderate; if against the British straits, large. They were criticized on both grounds.

(*See* also INTERNATIONAL COURT OF JUSTICE; IRELAND, NORTHERN.)

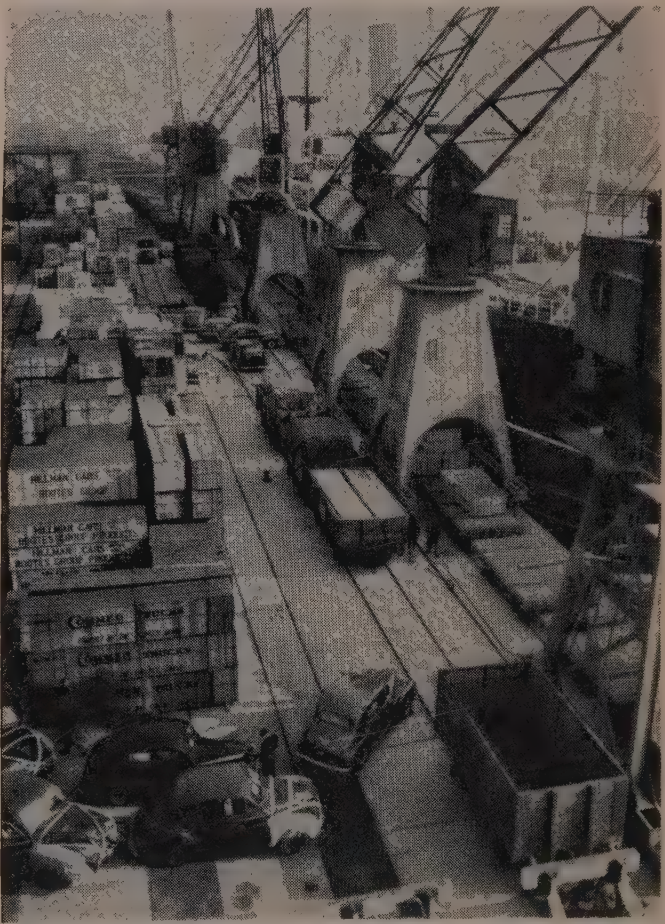
FILMS OF 1949.—*A Yank Comes Back, Royal Silver Wedding Anniversary, Robinson Charley* (British Information Services); *English Children, The British Isles* (Encyclopædia Britannica Films Inc.). (W. L. A.)

Education.—Great Britain (1948): primary and secondary schools 31,623, pupils 6,224,000; special schools 644, pupils 54,000; further schools 7,248, pupils 2,015,000; teachers, all schools 239,857. (1947–48): England, universities 12, university colleges 6, students 56,315, professors 1,018; Wales, university 1, students 4,654.

Finance and Banking.—Budget (actual, 1948–49): revenue £4,006,600,000, expenditure £3,175,600,000, surplus £831,000,000; (est. 1949–50): revenue £3,778,000,000, expenditure £3,329,000,000. Notes in circulation (Dec. 1949) £1,312,000,000. National debt (Dec. 24, 1949) £25,707,000,000. Exchange rate (after Sept. 18, 1949) £1=$2.80. Prior to Sept. 1949 the gold and dollar reserves of the sterling area were £330,000,000 at the old exchange rate. With the devaluation of the pound, gold and dollar reserves at the end of the year represented £603,000,000.

Foreign Trade.—Imports (1948) £2,078,000,000, (1949) £2,272,500,000; exports including re-exports (1948) £1,646,500,000, (1949) £1,843,000,000. Main sources of imports (1948, per cent of total imports): Canada 10.4; United States 8.7; Australia 8.1; Argentina 5.8; New Zealand 5.2. Main destinations of exports (1948, per cent of total exports): Australia 9.1; Union of South Africa 7.7; India 6.1; Ireland 4.8; Canada 4.4; United States 4.2.

Transport and Communications.—Great Britain: length of roads (1948) 183,659 mi.; licensed motor vehicles: cars (May 1948) 1,670,000, (Aug. 1949) 2,107,000; public conveyances (May 1948) 129,200, (Aug. 1949) 138,100; trucks (May 1948) 671,200, (Aug. 1949) 766,900; total



BRITISH CARS AND TRUCKS crated for export at Bristol in 1949. Passenger-car output in the first half of the year hit a new high in weekly averages as the export drive was intensified to increase dollar earnings in order to pay for imports of U.S. food, raw materials and machinery

motor vehicles (May 1948) 2,716,600, (Aug. 1949) 4,016,000 (including 262,200 agricultural tractors). Railways: total mileage (1948) 19,700 mi.; rail transport (1948) 21,259,000,000 passenger-mi.; freight traffic (1948) 21,457,000,000 ton-mi. Airlines: Aircraft miles flown (1947) 39,522,000, (1948) 44,206,000; passenger-miles flown (1947) 441,140,000, (1948) 554,536,000; freight carried (1947) 5,051 tons, (1948) 8,108 tons; mail carried (1947) 3,002 tons, (1948) 4,241 tons. Shipping: total number of vessels (steam and motor) (Dec. 1948) 12,795, of which 9,285 were vessels of less than 500 gross tons. Shipping movement at United Kingdom ports: all vessels (1948) 63,396,000 net tons. British vessels only 40,646,000 net tons. Number of telephones, private stations (Sept. 30, 1949) 5,043,465; number of radio receiving set licenses (Nov. 30, 1949) 11,900,200; number of television licenses (Nov. 1949) 206,700.

Agriculture and Fisheries.—(Long tons): wheat (1948) 2,361,000, (1949) 2,136,000; barley (1948) 2,027,000, (1949) 2,042,000; oats (1948) 2,963,000, (1949) 2,828,000; rye (1948) 47,000, (1949) 53,000; mixed corn (1948) 518,000, (1949) 640,000; potatoes (1948) 11,798,000, (1949) 8,861,000; sugar beets (1948) 4,319,000, (1949) 3,644,000, Livestock: cattle (1948) 9,806,000, (1949) 10,229,000; sheep (1948) 18,164,000, (1949) 19,473,000; pigs (1948) 2,151,000, (1949) 2,811,000; poultry (1948) 85,327,000, (1949) 95,223,000. Sales of milk in the United Kingdom amounted to 1,737,000,000 gal. in 1949. About 40% of Britain's food was home produced in 1949. At the end of the year meat, bacon, fats, milk, cheese, eggs, sugar and tea continued to be rationed. An account of the payments made on the food subsidy account was given by the chancellor of the exchequer on Nov. 3. He listed the annual rate of payments as follows:

To reduce the cost of imported food	£183,500,000
To reduce the cost of home-grown food	211,300,000
To reduce the cost of imported feedstuffs	33,800,000
To reduce the cost of home-grown feedstuffs	2,900,000
Acreage payments	16,100,000
Fertilizers	15,000,000
Total	£462,600,000

Fisheries: England and Wales (1948) 722,000 long tons, (1949) 708,600 long tons; total catch value (1948) £34,789,000, (1949) £29,479,000.

Industry.—(April 1948): Number of industrial establishments with more than 10 employees 51,040; total working population (June 1948) 23,146,000. Fuel and power: coal (1948) 209,400,000 long tons, (1949) 215,110,000 long tons; gas (1948) 505,369,000,000 cu.ft.; electricity (1948) 48,084,000,000 kw.hr. The total number of wage earners in the coal-mining industry was 724,000 in 1948. The average output in tons per manshift in 1948 was 1.11.

Petroleum: production output (refineries and distillation) (1948) 3,838,400 tons, including 1,753,200 tons of fuel oil and 617,100 tons of gasoline.

Raw materials (long tons): pig iron (1947) 7,785,000, (1948) 9,276,000; steel ingots and castings (1948) 14,877,000, (1949) 15,553,000; virgin aluminum (1947) 28,900, (1948) 30,000; copper, refined (1947) 88,900, (1948) 107,700; virgin zinc (1947) 68,300, (1948) 72,100; virgin tin (1947) 28,100, (1948) 31,000; nickel, refined (1947) 14,300, (1948) 17,100. Iron ore, total consumption 20,700,000 tons including 12,200,000 tons home extracted.

Timber (standards), softwood (1947) 66,480, (1948) 64,400; pitwood (1948) 195,000; plywood (1948) 72,700,000 sq.ft.; hardwood (1948) 38,900,000 cu. ft.

Textiles single cotton yarn (1948) 807,500,000 lb.; rayon and nylon yarn (1948) 150,500,000 lb.; wool, home production (1948) 50,000,000 lb. clean weight; wool yarn 181,700,000 lb.; woven wool fabrics (1948) 267,400,000 yd. (K. Sm.)

Great Lakes Traffic: *see* CANALS AND INLAND WATERWAYS.

Greece. A kingdom in the southern part of the Balkan peninsula, Greece has an area of 51,182 sq.mi. including the Dodecanese Islands (1,035 sq.mi.); the mainland accounts for 41,328 sq.mi. and the islands, the largest being Crete (3,235 sq.mi.), for 9,854. Pop.: (1928 census) 6,204,684 including 1,221,849 transferred from other countries, but mainly from Turkey (1,104,216); (Oct. 16, 1940 census) 7,344,860; (Dec. 31, 1949 est.) 7,960,000. Chief towns (1940 census, municipal area only): Athens (cap., 481,225); Piraeus (205,404); Salonika or Thessaloniki (226,147); Patras (79,570); Volo (54,919). Language: Greek (93%). Religion: Greek Orthodox (96.5%). Ruler, King Paul I; prime ministers in 1949, Themistocles Sophoulis and (from June 30) Alexander Diomedes (*q.v.*)

History.—The early months of 1949 were marked by a deterioration of security in Greece, with the Communist rebels reaching the climax of their military effort. On Jan. 14, rebel forces captured the industrial town of Náousa, in Macedonia, and held it for three days before being ejected by government troops. Many of the factories and other buildings of the town were destroyed by the retreating rebels, who also executed the mayor and many prominent citizens. This raid was followed by an attack on Karpenísion, in central Greece, which th rebels captured on Jan. 21 and occupied for a fortnight before government troops recaptured it.

This proved to be the last success for the rebels. The appointment of General Alexander Papagos, Greece's wartime leader, as supreme commander of the Greek armed forces and the drastic changes which the new commander in chief enforced in army commands and military tactics resulted in the methodical liquidation of the rebel forces beginning with the Peloponnesos, which was cleared by the end of March, and culminating in the large-scale offensives of August–September in the last remaining strongholds of the rebels in the Mount Vitsi and Mount Grammos areas, on the Greco-Albanian frontier. By the middle of October all organized resistance on the part of the rebels had collapsed, and on Oct. 16 the rebel radio announced the "temporary cessation of hostilities." Casualty figures issued by the Greek general staff showed that, from June 1, 1946, when guerilla activities began, to March 31, 1949, the Greek army lost 10,927 killed, 23,251 wounded and 3,756 missing; casualties inflicted on the rebels during the same period totalled 70,028 (28,992 killed, 13,105 captured and 27,931 surrendered). Noncombatant casualties were 4,247, of whom 3,516 were executed by the rebels and 731 were killed by rebel-laid mines. Damage to property included many bridges blown up, more than 11,000 houses destroyed and nearly 7,000 villages looted. About 700,000 persons were obliged to abandon their farms and homes in rebel-infested parts of the country and seek refuge in safe areas and more than 28,000 were abducted by the rebels and removed to Communist countries north of Greece.

In the domain of internal politics there were also several developments during 1949. The Liberal-Populist coalition government of Themistocles Sophoulis, which on Nov. 21, 1948, had obtained a vote of confidence by a majority of only 1, was obliged to resign on Jan. 15 after various attempts to broaden its basis had failed. Following a vigorous statement by the king that, unless a national government were formed at once he would be obliged to seek "another solution," Sophoulis succeeded in forming a new government on Jan. 19, comprising not only the two main parties (Populist and Liberal) but also the Unionist party of Panayotis Kanellopoulos and the New party of Spyros Markezinis, with Alexander Diomedes, a non-party elder statesman, as deputy premier. Although this government obtained an overwhelming vote of confidence a fortnight later, it had a brief life; allegations against Markezinis led to its resignation on April 12 and the formation, two days later, of a new government which was identical with its predecessor, with the exception that the New party was excluded. This government remained in office until June 24 when the prime minister, Sophoulis, died. Attempts by K. Tsaldaris, leader of the Populist (majority) party in the chamber of deputies, to form a government having failed, the king entrusted Diomedes with the formation of a new government, which was sworn in on June 30. The new government was again a Populist-Liberal-Unionist coalition, with Diomedes as prime minister and the leaders of the Populist and Liberal parties, Tsaldaris and Sophocles Venizelos, as deputy prime ministers.

The Greek question again came up for discussion before the fourth general assembly of the United Nations in September–December. The U.N. Special Committee on the Balkans (U.N.S.C.O.B.) presented its report, covering the period Oct. 1948–July 1949, in which it was stated that continued Albanian and Bulgarian aid to the Greek rebels had made the situation a threat to the political independence and territorial integrity of Greece and to peace in the Balkans, and that both these countries had allowed the rebels "extensive use" of their territori d had actively campaigned for guerilla recruitment. The re- t added that Yugoslav aid had decreased and "may have sed." (In a speech at Pola on July 10, Marshal Tito an- unced that the Yugoslav frontier with Greece would be sed.)

After a lengthy and acrimonious discussion, the general assem- adopted on Nov. 18, by 50 votes to 6 with 2 abstentions, a olution naming Albania, Bulgaria and Rumania as having ac- ely assisted the Greek guerillas; calling upon Albania, Bul- ria and other states concerned to cease assistance to the erillas, including the use of their territories as a base for ned action; and recommending to all states to: (1) refrain m action designed to assist any armed group fighting Greece;) refrain from direct or indirect provision of arms or other r materials to Albania and Bulgaria until U.N.S.C.O.B. or other competent U.N. organ determined that unlawful as- tance by these states to the Greek guerillas had ceased; (3) e into account, in their relations with Albania and Bulgaria, e extent to which these countries abided by the recommenda- ns of the general assembly in their relations with Greece.

The resolution renewed U.N.S.C.O.B.'s mandate and called on Albania, Bulgaria and Yugoslavia to co-operate with it. addition, all states harbouring Greek nationals as a result of erilla operations were called upon to facilitate the peaceful patriation to Greece of those who desired to return and "live accordance with the law of the land." Another resolution, opted unanimously by the assembly, noted that Greek children moved by the rebels to other countries had not yet been urned to their homes (as recommended by the resolution ssed unanimously by the U.N. general assembly on Nov. 27, 48) and urged all states harbouring Greek children to arrange their speedy return to Greece.

A conciliation commission set up on Sept. 29 under Gen. rlos Romulo, president of the U.N. general assembly, reported Oct. 23 that its efforts had broken down, mainly because of e insistence of the U.S.S.R. and Albania that the existing eco-Albanian frontier should be regarded as permanent and t, in consequence, Greece should finally renounce its claims northern Epirus.

On Oct. 31, Christopher Mayhew, the British under secretary foreign affairs, announced in the house of commons the pending withdrawal from Greece of the British troops who d been stationed there since the liberation, stressing that this thdrawal was decided upon in view of the improvement in e situation brought about by the victories of the Greek army d did not indicate any lessening of British interest in the curity of the Greek people.

On Aug. 8, the committee of ministers of the Council of rope, at its first meeting in Strasbourg, invited Greece to n the council and allotted that country six representatives in e assembly.

On Aug. 31, Greece signed a reparations agreement with Italy, virtue of which Italy would pay Greece $105,000,000 in five arly instalments by supplying agricultural and industrial prod- ts for which Greece would provide the raw materials. (*See* o EASTERN ORTHODOX CHURCHES; UNITED NATIONS.)

(A. A. P.)

ducation.—(1947–48) Primary and infant schools 9,082, pupils 1,023,- , teachers 16,354; secondary schools 407, pupils 92,687, teachers 35; universities 2, students 7,330, professors and lecturers 294. teracy (1940) 38%.

inance.—Budget: (1949–50 estimates) revenue 3,953,000,000,000 chmas, expenditure 5,749,000,000,000 drachmas. Currency circulation ly 1949; in parentheses, July 1948): 1,292,000,000,000 drachmas 046,000,000,000 drachmas). Monetary unit: drachma with an exchange e (from Sept. 20) of 15,020 drachmas to the U.S. dollar.

oreign Trade.—1947: Imports U.S. $137,400,000 (1,103,450 metric s); exports U.S. $55,300,000 (175,041 metric tons). 1948: Imports 96,000,000,000 drachmas; exports 449,900,000,000 drachmas.

ransport and Communications.—Roads (Dec. 1948) in good condition 3,666 mi. Licensed motor vehicles (Dec. 1948): cars 6,250, commercial vehicles 16,035. Railways (Dec. 1948): operating trackage 1,328 mi. Shipping (March 1948): under Greek flag, merchant vessels 601, tonnage 1,286,161; under foreign flag (mainly Panamanian), merchant vessels 246, tonnage 1,362,827.

PAVING OPERATIONS on the asphalt Salonika-Serres road. Reconstruction of the Greek transport system, financed under the U.S. Interim Aid program, was completed in 1949 and included extensive work on highways, port and drydock facilities, bridges and railways

Agriculture and Fisheries.—Main crops (in 000 metric tons, 1948, 1949 estimates in parentheses): wheat 770 (650); barley 190; oats 110; rye 40 (30); potatoes 304; rice 9; maize 229; legumes (dry edible) 68; tobacco 37; cotton 36; must 380; table grapes 105; currants 78; sultana raisins 22; dry figs 23. Livestock (spring 1948): sheep 7,000,000; horses 240,000; donkeys 360,000; mules 148,000; bulls 700,000; buffaloes 59,000; goats 3,600,000; pigs 485,000; poultry 8,312,000. Sea fisheries: total catch (1948) 28,000 tons.

Industry.—Persons employed in industry (Oct. 1948) 122,500. Raw materials (in metric tons, 1948): iron pyrites 14,805; baryta 18,706; bauxite 44,238; magnesite 11,610; emery 12,0000; chrome ore 1,500; lead 1,834; zinc 5,712; pig lead 1,166; lead in sheets 254; caustic calcined magnesia 238; lignite 150,000.

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Green, William (1873–), U.S. labour leader, was born March 3 in Coshocton, O., spent much of his youth as a miner, and at the age of 27 was a subdistrict president of the United Mine Workers of America. He was elected president of the American Federation of Labor in 1924; at the A.F. of L. 1949 convention, he was re-elected to his 26th straight term. Under Green, the A.F. of L. remained predominantly a crafts union. When the Committee for Industrial Organization (the later Congress of Industrial Organizations), a group of ten A.F. of L. unions, opened its campaign to establish industrial-type unions, Green refused to sanction the move and the C.I.O., led by John L. Lewis, broke away from the parent body in 1937. Over the years Green repeatedly emerged as Lewis' chief opponent.

Green observed his pledge to keep labour peace for the duration of World War II, but at war's end he led in criticism of the Case strike-control bill of 1946 and the Taft-Hartley labour act of 1947, calling on labour to defeat in the 1948 elections all who had supported such legislation.

In 1949, however, the Taft-Hartley law remained on the books, and Green repeatedly attacked it, repeating in his Labor day speech his pledge of new efforts to elect in 1950 a congress friendly to labour. In October Lewis suggested that the United Mine Workers of America, the C.I.O. and the A.F. of L. unite to provide funds for striking steelworkers. Green termed "the pooling of labour's resources, while divided as it is today," impossible. In reply Lewis wrote: "I did not think you would do anything. You didn't. You rarely do."

Greenland.

The world's largest island (840,000 sq.mi., about 705,000 sq.mi. covered by an ice cap), in the North Atlantic ocean, northwest of Iceland, Greenland is a Danish possession. It came under temporary United States protection in 1941. Capital, Godthaab. A population of 21,384 (Oct. 1, 1945) is scattered in small settlements mostly on the west and southwest coast; 569 in all are listed as Europeans (largely Danes) and the rest are native Greenlanders. Seats of the governors are Godthaab in the south and Godhavn in the north.

History.—The political position of Greenland was clarified in 1949, and the possibility of dispute over United States protectorship and Danish sovereignty in the island was minimized. Denmark's accession to the North Atlantic treaty (*q.v.*) provided machinery for co-operative action in what was in any case regarded as a mutual interest. The United States continued to operate air bases, but the weather stations had passed into Danish hands. The U.S. navy was developing a small operating base in one of Greenland's southern fjords. And in November the navy held exercises in Davis strait, partly to the north of the Arctic circle. The air force was interested in the area as an observation point from which to spot any strange planes coming in over the "roof of the world." The interest of the United States was accented by the fact that in 1949 the U.S. alone maintained diplomatic representation in the island, through the consulate at Godthaab.

The reform of the Danish administration continued to be discussed in Copenhagen, Den. Prime Minister Hans Hedtoft emphasized in an address in April that changing circumstances in Greenland demanded an overhaul of the political system.

Increasing warmth in Greenland's climate and the fruits of years of education were two factors pointing to change. The decrease of seals in Greenland waters, and the great increase in cod—a more marketable product—had definitely shifted the economic base. The direction of carefully thought-out reform would obviously be toward greater individual and economic freedom for the people of Greenland, and less rigid control from Denmark.

A Danish commission went to Greenland during the summer and reached accord on a number of proposals including housing and public health.

In the spring of 1949 a French scientific expedition prepared to land by parachute on the great ice cap. In the summer a large expedition, international in composition, sailed from Copenhagen to investigate a deposit of lead ore in the region of Kong Oscars fjord, east Greenland. The discoverer, Lauge Koch, thought it might contain 1,000,000 tons of 84% lead ore.

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Grenada: *see* Windward Islands.

Gromyko, Andrei A.

(1909–), soviet diplomat, was born on July 5 in Starye Gromyki, Byelorussia. He graduated from the Minsk Institute of Agricultural Economics in 1934. In 1938 he was taken into the commissariat for foreign affairs, and after one year's training was sent to Washington, D.C. In Aug. 1943 he succeeded Maxim Litvinov as ambassador to the U.S. and also to Cuba. He headed the soviet delegation at the Dumbarton Oaks conference in 1944, attended the San Francisco conference in 1945 and was appointed chief soviet representative to the United Nations. On April 10, 1946, he was freed from his duties as ambassador to become permanent soviet delegate to the U.N. Security council. On Dec. 29, 1947, it was announced that he had been promoted to deputy foreign minister. In July 1948, being replaced at the Security council by Jacob Malik, Gromyko left New York for Moscow. In November he was awarded the Order of the Red Banner of Labour for outstanding service in the diplomatic field. On March 4, 1949, when Andrei Y. Vishinsky succeeded Vyacheslav M. Molotov as minister of foreign affairs, Gromyko became first of the four deputy foreign ministers of the U.S.S.R.

Grotewohl, Otto

(1894–), German politician, was born at Brunswick, Germany. A printer by trade, he joined the S.P.D. (Sozialdemokratische Partei Deutschlands) after World War I, was a member of the Brunswick *landtag* 1920–25, Brunswick minister of the interior and education 1921–22, and of the interior and justice 1923–24. From 1925 to 1933 he was a member of the *reichstag*. In 1933 he was arrested and sent to a concentration camp. When in June 1945 the S.P.D. was re-organized he was elected leader of the party in the soviet zone of Germany and member of the central executive committee. He accepted the idea of a merger between the S.P.D. and the K.P.D. (Kommunistische Partei Deutschlands), which was mooted by the political advisers to the soviet military administration; and when, in April 1946, the merger took place in the soviet zone he was elected one of the chairmen of the resultant S.E.D. (Sozialistische Einheitspartei Deutschlands), the other being the Communist leader Wilhelm Pieck (*q.v.*); he also became one of the nine members of the Politburo of the S.E.D. When the Russians decided to organize a people's republic in their zone of Germany, Grotewohl was appointed prime minister of the east German government and on Oct. 12 presented his cabinet to the lower house.

Guadeloupe: *see* French Union.

Guam.

Guam is the largest and southernmost island of the Marianas, lying in the Pacific at 13° 26′ N. lat. and 144° 39′ E. long., about 5,100 mi. from San Francisco, Calif. and 1,500 mi. from Manila, Phil. Area: 206 sq.mi. Population July 1, 1949, consisted of 26,744 Guamanians and about 75,000 non-Guamanians, including U.S. military and civil service personnel. Agaña is the principal city and capital. Other important towns are Sinajana and Inarajan. The Guamanians are Chamorros, and their religion is predominantly Roman Catholic.

Guam is administered by the U.S. navy; however, on July 1, 1950, the U.S. department of the interior was scheduled to take over responsibility for the administration of the island. Rear Admiral Charles A. Pownall, who retired Sept. 1, 1949, was the last naval officer to be appointed governor; on Sept. 3, 1949 Carlton Skinner was appointed by the president of the U.S. as the first civilian governor of the island. The Guam congress composed of a house of council and a house of assembly, is a popularly elected legislature. In 1947 the Guam congress received legislative power in place of its former advisory power. The congress can also override the governor's veto. Each of island's municipalities is headed by a Guamanian commissner elected by popular vote for a four-year term.

ducation.—In 1949 there were 21 elementary and junior high schools 1 high school with 9,029 pupils and 397 teachers and principals. Inction is given in English.

inance.—During the fiscal year ending June 30, 1949, Guam's exditures amounted to $3,288,991, of which $1,082,380 came from U.S. ropriations, $1,985,824 from local revenues and the balance from the of surplus war materials and certain special funds. Revenues colted during the fiscal year amounted to $3,062,175. The Bank of am, a navy-controlled institution, had resources in excess of $22,000, on Dec. 31, 1948.

ndustry and Trade.—In 1949, 3,000 out of the 8,700 employable amanians worked for U.S. government establishments. In 1948 imports ounted to $7,946,512; exports totalled $3,887,165, almost all of ich represented surplus military materials being shipped to China or ng returned to the U.S.

ransportation and Communications.—There are about 80 mi. of paved hways on Guam and about 60 mi. of improved secondary roads. There no railroads, but 5 military airfields. Radio and wireless communicans were in 1949 under the control of the military forces.

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uatemala. A Central American republic, Guatemala is bounded by Mexico, British Honduras, Honduras d El Salvador. Area: 45,452 sq.mi.; pop. (mid-1948 est.) 17,000, of whom more than half were Indians, the remainder gely of white and mixed blood. Capital: Guatemala City 946 est. pop., 225,000). Other urban centres (1940 census) are: tigua Guatemala (12,601), Chiquimula (10,868), Comalapa 0,461), Mazatenango (14,227), Puerto Barrios (15,784), ezaltenango (33,538) and Zacapa (14,443). Language: anish; religion: predominantly Roman Catholic. President 1949: Juan José Arévalo.

History.—The continued minority resistance to the leftist ministration of President Arévalo was highlighted in 1949 by o abortive revolts. Guatemala also experienced a disastrous od and two major labour disputes during the year.

The first uprising (described by the government as mere nditry) occurred April 7, when 200 armed men seized five vns near the Mexican border and sacked the customs offices. vernment troops regained the towns within two days, and st of the insurrectionists were either killed or captured.

The second and most important revolt (the 20th since Arélo took office in 1945) began July 18. It was apparently set by the assassination of Col. Francisco Javier Arana, chief the armed forces and potential successor of President Arélo. The Guardia de Honor garrison rebelled but was subed within 24 hr., after the loss of 50 lives. Labour unions, ident organizations and large numbers of other civilians gned themselves with the government during the crisis. The ministration denied rumours that Colonel Arana had been otting a coup and implied that he was assassinated by "reionaries" for having refused to lead an insurrection. In Dember a military court sentenced 14 of the accused insurgents from two to ten years' imprisonment. Constitutional guartees, suspended at the time of the revolt, were restored Sept. , but new legislation, enacted the same month, restricted the litical activities of the army, clergy and to a less extent, press.

On Dec. 8 the congress approved a motion recommending inuctions for the Guatemalan delegations before the United ations assembly and the Organization of American States to ppose a total break of commercial and diplomatic relations th the Franco government of Spain.

Rainstorms in September and October resulted in great loss life and caused property damage amounting to about $23,0,000, including cash and subsistence crops, livestock, highys and railroads. The government issued $2,000,000 in bonds finance emergency rehabilitation and relief.

BULLET-RIDDLED BUILDING in Guatemala city, scene of a military revolt which broke out in July 1949 against the government of Pres. Juan Arévalo

A slowdown strike of United Fruit Co. wharf workers at Puerto Barrios and banana harvesters in Tiquizate reached a crisis in February when the company suspended its activities, leaving 10,000 unemployed and paralyzing shipping at the chief Pacific port for several weeks. The conflict was settled March 7 through government mediation, the workers being awarded wage increases and a collective contract. A long-standing dispute between the International Railways of Central America and its unionized employees was settled by arbitration in August.

In September the United Fruit Co. announced its abandonment of more than 50,000 ac. of banana plantations in the Izabal region, because of plant disease.

Education.—In 1946 there were 4,425 elementary schools with 8,266 teachers and 225,362 students; 45 secondary schools with 819 teachers and 5,494 students. The University of San Carlos had 1,719 students; the School of Agriculture, 184; the Polytechnical and Military academy, 170; the Theological seminary, 12; and the Conservatory of Music, 407. The 1948–49 national budget allocated $6,300,000 for public education.

Finance.—The monetary unit is the quetzal, maintained at par with the U.S. dollar. The national budget for 1949–50 provided for expenditures of $41,496,265, a $10,000,000 reduction from the final 1948–49 figure. As of March 31, 1948, the public debt was $847,700, external; $3,000,000, internal. Foreign-exchange reserves on July 31, 1949, totalled $45,500,000 ($50,100,000 on the same date in 1948).

Trade and Resources.—Exports for 1948 amounted to $50,200,000, including monetary gold and silver, and imports were valued at $68,400,000. More than three-fourths of the trade was with the United States. During the first six months of 1949 exports were down 1.6% and imports up 4.4%. The leading exports in 1947 were coffee (889,000 bags of 132 lb. each), bananas (14,884,000 stems), cabinet woods (4,970,090 sq.ft.), lumber (3,658,983 sq.ft.), cinchona bark (888,201 lb.), cattle hides (975,959 lb.), essential oils (300,421 lb.) and rice (1,134,596 lb.). The exportable coffee crop for the 1949–50 season was estimated at 750,000 bags (910,000 in 1948–49). In 1947 the country had 900,974 head of cattle, 155,423 horses, 61,000 mules and asses, 617,611 sheep, 63,545 goats and 374,377 pigs and hogs.

Communications.—In 1947 railroads totalled 817,477 mi. Of the 4,800 mi. of highways in 1945, 2,400 were improved. There were about 8,500 automobiles and trucks registered in 1948. At the end of 1948 telephone lines totalled 4,025 mi. (2,893 mi. government-operated); telegraph lines 4,366 mi.; radio broadcasting stations 15; and receiving sets approximately 40,000. (*See* also BRITISH HONDURAS.)

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FILMS OF 1949.—*Natives of Guatemala* (Bailey Films Inc.).
(M. L. M.)

Guggenheim Memorial Foundation, John Simon: *see* SOCIETIES AND ASSOCIATIONS.

Guiana, British: *see* BRITISH GUIANA.

Guiana, Dutch: *see* SURINAM.

Guiana, French: *see* FRENCH UNION.

Guided Missiles: *see* MUNITIONS OF WAR.

Guinea: *see* French Union; Portuguese Colonial Empire; Spanish Colonial Empire.

Gymnastics.

The 61st national Amateur Athletic union gymnastics championships, sponsored by the University of Illinois at Navy Pier, Chicago, Ill., in 1949, drew a record field of 203 men and 54 women. The new all-around champion, William Rotzheim of the University of Illinois, Navy Pier, scored 321.8 points. Clara Schroth of the Philadelphia Turners dominated the feminine stars with 285.7 points.

Men's title winners follow: calesthenics, Robert Stout, Temple university; rope climb, Don Perry, unattached; parallel bars, Joseph Kotys, Cleveland Swiss Turners; Indian clubs, George R. Hern, unattached; side horse, G. J. Rabbitt, Syracuse university; long horse, William Tom, Occidental college; trampoline, Edsel Buchanon, unattached; flying rings, Waldemir Baskovich, Chicago Sokol club; horizontal bar, Edward Scrobe, New York American Turners; tumbling, I. E. Bedard, University of Illinois, Navy Pier; team, University of Illinois, Navy Pier.

On her way to the all-around title, Clara Schroth won the parallel bars, balance beam, side horse and flying rings. Other victors were Meta Elste, Acrotheatre, University of Chicago, calisthenics; Marie Armstrong, Philadelphia Turners, tumbling; Margaret Dutcher, Ridgewood, N.J., Indian clubs; and Chicago Lincoln Turners, team drill.

Temple university won both the Eastern Intercollegiate league and the National Collegiate Athletics association team championships. (T. V. H.)

Gynaecology and Obstetrics.

Three authors of textbooks on obstetrics, J. P. Greenhill, Nicholson J. Eastman and Paul Titus, met in 1949 to standardize obstetrical terms, definitions and classifications.

Engagement of the foetal head was defined as having occurred when the largest presenting diameter of the head of the baby has passed the plane of the pelvic inlet, recognizable when the most dependent portion of the skull has reached the ischia spines, the ischia being the pelvic bones. This interspinous diameter was designated as zero station. Stations are measured by centimetres of distance of the dependent portion of the skull above the spines, designated as minus station, or below the spines, designated as plus station. Thus, progress in childbirth is as follows: minus-two station, minus-one station, zero station or engagement, plus-one station, plus-two station, etc.

Forceps were defined as follows: high forceps—upon unengaged head; low forceps—when head is upon perineal floor and visible with sagittal suture in anteroposterior position; midforceps—head located between point of engagement and perineal floor, usually with incomplete rotation.

Placenta previa was redesignated by two self-explanatory terms, total and partial. Low implantation of placenta continued as the definition for all placentas implanted low but not over the internal os or encroaching on it at the time of the vaginal examination.

Toxaemia of pregnancy was classified to designate in Group I pre-eclampsia and eclampsia, in Group II chronic hypertensive vascular disease with or without acute toxaemia. Hyperemesis or excessive vomiting was removed from the category of toxaemia *per se,* although many authorities continued to believe toxaemia and hyperemesis have a similar or related cause, particularly since it had been shown that the chorionic gonadotropin level or amount of this hormone in the blood is elevated in both conditions. Acute yellow atrophy of the liver was displaced from classification as a toxic disease of pregnancy and placed in the medical category of infectious hepatitis.

Other terms clarified included breech presentations (babi born bottom first) divided into three classes: frank breec complete breech and incomplete breech (including the foot knee). A breech birth might deliver spontaneously, or by "ex traction" (entirely by the operator), or as an "assisted" breec delivery (delivered to umbilicus by maternal forces and the extracted). Premature placental separation was termed abrupti placentae, not ablatio placentae. The authors agreed also tha external measurements of the pelvic inlet were unnecessary an might properly be deleted from teaching textbooks. The autho concentrated on an understanding agreement for the sake simplification, and of standardization, especially where com monly used terms were at variance, or not definitive.

Diethylstilbestrol, the estrogenic hormone, found a mo prominent place in the armamentarium of obstetricians. An a ticle by O. Watkins Smith in late 1948 had claimed its efficac in certain complications of pregnancy and presented a stan ardized dosage routine. The conditions apparently benefited b stilbestrol are threatened abortion, habitual abortion, essenti hypertension and diabetes mellitus. Its use for these conditio became quite widespread during 1949, but more time was nece sary for a full appraisal.

Veratrum viride was revived in some clinics for the treatme of toxaemia or hypertensive disease in the third trimester pregnancy. Results as compared to therapy with hypertonic gl cose and magnesium sulphate did not seem to represent an i provement over the latter.

Diagnosis of Rh-factor blood type in expectant mothers b came almost a universal procedure. Those Rh negative mul paras married to Rh positive husbands were now carefully fo lowed by blood titration levels throughout pregnancy, and whe rise in titre develops, foetal erythroblastosis is developing, wi some exceptions. An effective treatment was sought for perso with such a rise in titre. The extract from red blood cells, ha ten, reported in 1948 continued to bring apparently encouragi therapeutic results. Not only was hapten utilized for treati pregnant women who show rising titre, but it was used also treating erythroblastotic infants. Foetal mortality of erythr blastosis was lowered by induction of labour earlier in mothe with rise in titre and by massive transfusion of the newbo infants as needed.

Haemorrhage retained first place as the cause of matern death. Trends were evident toward more conservative treatme for both placenta previa and placenta abruptio.

Dramamine came as a new therapeutic measure against t ordinary nausea and vomiting of pregnancy. This antihistami brought such good results in motion sickness that experime were conducted in pregnant women. Relief of symptoms curred in 72% of the cases.

Various clinics continued to report additional uses for an biotics. The use of prophylactic doses of penicillin in postpart patients was reported favourably from several sources. Su drugs in a cream base were found beneficial for certain types vaginal discharge, and were found an excellent medium moistening vaginal packs for use following vaginal plastic erations.

Encouraging progress was made both in diagnosis and tre ment of pelvic malignant diseases. Education of the pu seemed to be influencing more and more women to report their physicians for routine examinations and for early investi tion of abnormal pelvic symptoms. The new practice of cyt ogy, or examination of secretions for cast-off tumour cells, ori nated by George N. Papanicolaou and Herbert F. Traut, found its important place in the early detection of canc Vaginal cytological smears proved to be a valuable adjunct ther methods of diagnosis of uterine cancer, particularly early sions. It was generally agreed that vaginal smears should be sed as an adjunct to the diagnosis of uterine cancer but should ot replace clinical and pathological examinations.

In cancer of the cervix, clinical "stage one" tumours were eing treated with radium followed by wide excision, and some linicians felt even "stage two" lesions might thus be successully treated. "Stages three" and "four" still fell into the status f inoperable lesions. One clinic, however, treated even far adanced lesions by "massive" or extensive surgery including renoval of all the pelvic organs. Modern anaesthesia plus reliable nd available blood transfusion had made this radical surgical pproach possible without former high mortality rates.

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(P. T.)

laiti. The Republic of Haiti occupies the western third of the West Indian island of Hispaniola, the rest of which contitutes the Dominican Republic. Haiti's population, officially stimated in excess of 3,500,000 (1949), occupies an area of 0,748 sq.mi., with a density considerably above 300 to the q.mi. The Haitian population, speaking French and local atois, is almost wholly of African ancestry; most of the 5% ot wholly of African blood are predominantly African. The apital, Port-au-Prince, founded in 1750, has a population of nore than 125,000; the provincial centres of major importance re Cap Haïtien (15,000), Gonaïves (20,000) and Les Cayes 15,000).

History.—Pres. Dumarsais Estimé remained in power hroughout the year, notwithstanding disaffection among some nilitary officers, student disorders and efforts to bring about a eneral strike, which led to vigorous measures in mid-November. n amnesty, however, was proclaimed on Nov. 30. Friendly elations with Cuba were stressed, while those with the Dominian Republic became more tense in the closing months of 1949.

The economy is primarily agricultural, producing sugar, cofee, sisal, fine timber and vegetable oils. The population is venly dispersed. In 1949, systematic efforts were made to inroduce more advanced agricultural methods. Exports rose harply (in value) during the summer, when normally they deline, because of the brisk demand for coffee. An important talian mission was received in August. On Dec. 24, the trade greement with the United States was put into effect, the first f the bilateral agreements concluded by the United States nder the General Agreement of Annecy. This arrangement rovided for a reduction in U.S. tariff rates on Haitian rum and ther Haitian products. A new issue of metallic currency was ut in circulation.

On Dec. 8, the president opened an international fair in vhich the United States, France and other countries particiated. Later that month, the canals irrigating about 30,000 ac. n the valley of the Artibonite river were opened. (C. Me.)

Education.—Haiti had in 1949 about 1,060 primary schools attended y 87,000 pupils and 6 national *lycées* and 15 private secondary schools ttended by about 10,000 pupils. Higher education was available at the ational law and medicine schools, the Central School of Agriculture and the government-controlled University of Haiti. About 15% of the 1948–49 budget was earmarked for education.

Finance.—The monetary unit is the gourde, valued in 1949 at 20 cents U.S. currency, official rate. The budget for the fiscal year 1950 (Oct. 1, 1949-Sept. 30, 1950) balanced government revenue and expenditure at $14,643,270. The net public debt on Sept. 30, 1948, was $8,851,540. Private deposits in the two banks on Sept. 30, 1948, were about $8,000,000.

Trade and Communications.—Exports in the trade year 1948 (Oct. 1, 1947-Sept. 30, 1948) were $30,884,927; imports were $32,208,543. The chief exports were coffee (34%), sisal (26%), bananas (9%) and sugar (7%); leading imports were cotton and manufactures (26%), food and beverages (19%) and machinery, vehicles and apparatus (12%). The U.S. supplied 82% of the imports and absorbed 60% of the exports.

On Jan. 1, 1949, there were about 2,000 mi. of improved roads, of which only about 235 mi. were surfaced. There were 88 mi. of public railway and 75 mi. of industrial trackage operated by the Haitian-American Sugar company. Registered motor vehicles totalled 3,880 on Jan. 1, 1949. International air service was supplied by Pan American World Airways; the Haitian air force furnished internal air transport. In 1949 there were five small commercial broadcasting stations and about 4,900 telephones.

Agriculture.—Agriculture is the principal economic activity, but only about one-third of the total land area is under cultivation. Coffee is the chief crop; 483,509 bags of 132 lb. each were exported in the trade year 1948–49. Sisal, the second crop, had grown rapidly in importance; 28,740 short tons were exported in 1947–48. In 1948, 46,623 short tons of sugar and 2,413,123 gal. of molasses were produced. Livestock (1945) included 200,250 cattle, 13,800 sheep and 1,010,000 goats.

Manufactures.—Manufacturing is on a small scale, mainly for domestic consumption. There is one large modern sugar mill near Port-au-Prince; two smaller mills were reported to be under construction in 1949. A modern textile mill makes denim and gray goods.

Mineral Production.—Minerals are of little importance. There are said to be undeveloped deposits of copper, silver, gold, iron, tin, antimony, sulphur, coal, nickel and gypsum.

Hammer Throw: *see* Track and Field Sports.

Handball. For the first time since 1934, the annual senior national A.A.U. four-wall championships were held in New York city, at the New York Athletic club. For the first time play was held beyond the customary week, starting April 30 and continuing daily through May 7. Defending champion Gus Lewis was on hand but the ultimate winner was Victor Hershkowitz of Brooklyn, N.Y., who became the first four-wall champion also to have held (in 1948) the one-wall singles title. The doubles were won by Gus Lewis and Sam Haber, representing the Town club of Chicago, Ill. Other finalists are listed below:

National Four-Wall Rankings for 1949

Singles	Doubles
1. V. Hershkowitz, Brooklyn, N.Y.	1. Gus Lewis and Sam Haber, Chicago, Ill.
2. Walter Plekan, Buffalo, N.Y.	2. Henry Herz and Marshall Lehrer, New York, N.Y.
3. Jack Emas, Philadelphia, Pa.	3. Frank Coyle and William Baier, Chicago, Ill.

National One-Wall Rankings for 1949

Singles	Doubles
1. M. Orenstein, Brooklyn, N.Y.	1. M. Orenstein and G. Baskin, Brooklyn, N.Y.
2. M. Alexander, Brooklyn, N.Y.	2. V. Hershkowitz and A. Wolf, Brooklyn, N.Y.
3. uncontested	3. M. Alexander and A. Schneider, Brooklyn, N.Y.

(Fr. Ro.)

Harbours: *see* Rivers and Harbours.

Harness Racing: *see* Horse Racing.

Harriman, William Averell (1891–), U.S. government official, was born on Nov. 15, and graduated from Yale university in 1913. He became a vice-president of the Union Pacific Railroad company in 1915 and in 1932 was named chairman of its board of directors. He was also a director of the Illinois Central Railroad company after 1915, becoming chairman of its executive committee in 1931. During World War I he organized a shipbuilding and operating company, and in 1920 launched W. A. Harriman & Co., investment bankers, a firm that became Brown Brothers Harriman & Co. in 1931. He served as administrative officer in the National Recovery administration, and was a member of the business advisory council of the department of commerce from its establishment in 1933. During 1940 and 1941 he served with the National Defense Advisory commission and its successor, the Office of Production Management. In March 1941 Pres. F. D. Roosevelt named Harriman lend-lease expediter to Great Britain and later to the U.S.S.R. as well; he was U.S. ambassador to the U.S.S.R. from Oct. 1943 to Feb. 1946, and he attended every major allied conference during World War II. On April 1, 1946, Pres. Harry S. Truman named him ambassador to Great Britain and on Oct. 7, 1946, secretary of commerce. In April 1948 he was named special U.S. representative abroad, with the rank of ambassador extraordinary and plenipotentiary, to assist in supervising U.S. recovery aid to western Europe. In Feb. 1949 he told the house foreign affairs committee that the European Recovery plan had arrested the "spread of tyranny" in Europe. At the end of June he was U.S. representative at the session of the council of the Organization for European Economic Cooperation in Paris that settled amicably the first serious U.S.-British dispute over administration of the aid-to-Europe plan by agreeing to a program for financing intra-European trade.

Hawaii.

The territory of Hawaii consists of a group of eight large islands and numerous islets in the Pacific ocean between latitudes 18° 55′ and 22° 15′ N. and between 154° 50′ and 160° 30′ W. longitude. The total area of the group is 6,433 mi. From southeast to northwest, the islands are Hawaii, Kahoolawe, Maui, Lanai, Molokai, Oahu, Kauai and Niihau. In addition, stretching northwestward beyond Niihau more than 1,100 mi. is an archipelago of rocks, reefs and shoals which includes Midway (longitude 177° 22′ W.). Likewise, 960 mi. S. of Honolulu and included as part of the city and county of Honolulu lies Palmyra, a coral atoll consisting of 55 islets, 5 mi. long and 2½ mi. wide. The largest island in the territory is Hawaii, with an area of 4,021 sq.mi. The capital of the territory is Honolulu, situated on the island of Oahu. Honolulu is a modern city with a population (1949 est.) of 267,755, exclusive of military and naval personnel.

The population of the territory grew from 423,330 in 1940 to 530,891 in 1949. The largest single racial group is the Japanese, which constitutes 33.8% of the total. The second largest is the Caucasian with 30.8% of the total, and the Hawaiians and part Hawaiians are third with 14%. Other important groups in origin are Filipino, Chinese, Puerto Rican and Korean.

Ingram M. Stainback became governor of Hawaii on Aug. 24, 1942, and was reappointed July 13, 1946. Joseph R. Farrington was in 1949 serving his fourth term of two years each as Hawaii's delegate to the U.S. congress.

History.—Hawaii has been a territory of the United States since 1900. Since that date the territory has made repeated petitions to congress for statehood and in a plebiscite in 1940 its electors voted in favour of statehood by a majority of more than two to one. A statehood convention was to be held in Honolulu in April 1950, with delegates from all of the major islands attending. The constitution drafted at this convention would be submitted to the territorial legislature for approval and then sent on to congress with the request that it be approved by that body.

Banking and Finance.—Bank clearings in 1948 amounted to $1,785,356,736. The volume of business transacted was $1,246,884,485.21, an increase of $45,800,766.76 over 1947. Total territorial tax collections on business and otherwise amounted to $64,757,523, compared with $54,240,000 in 1947. The net bonded indebtedness was reduced to $7,204,000. The net assessed valuation of real property was $299,188,296. Internal revenue collections for the fiscal year ending June 30, 1948, totalled $108,177,886.66, compared with $107,651,471 in 1947.

Trade and Commerce.—Hawaii purchased from the mainland United States in 1948 merchandise valued at approximately $350,000,000 and shipped to the mainland products valued at approximately $182,000,000.

Production.—Hawaii's principal crops are sugar, pineapple and coffee. For the fiscal year 1948–49 a total of 835,107 tons of sugar valued at $101,300,000 were produced; 20,322,775 cases of pineapple and juice valued at $75,000,000; 6,000,000 lb. of (green) coffee valued at $1,670,000. In addition to export crops, field crops and miscellaneous fruits, vegetables and nuts valued at $9,184,000 were marketed locally. Livestock and poultry products had a value of $21,785,000. The total catc of fish during the year amounted to 7,000 tons, valued at $4,300,000

(I. M. S.)

LONGSHOREMEN unloading their first ship at Honolulu, T.H., after seizur of the strike-bound docks under a territorial law passed Aug. 6, 1949. Th 159-day strike by members of the C.I.O. Longshoremen's and Warehousemen' union was settled Oct. 6 for a 14-cent hourly wage raise plus another 7 cent after March 1, 1950

Hay.

The 1949 U.S. crop of all kinds of hay amounted to 99,305,000 tons, only slightly less than the 99,471,000 ton of 1948 and the average for the decade of 99,539,000 tons. Th 72,835,000 ac. of harvested hay represented a slight decreas compared with either 1948 or the decade 1938–47. Averag yields of 1.36 ton per acre approximated recent averages. Except for rain damage to some of the early cuttings, particularl in the midwest, quality was good. Wisconsin, producing 6,288,000 tons, was the leading state.

An alfalfa hay crop of 38,546,000 tons set a new record a did the 8,571,000 tons of lespedeza; both were from record-hig acreages. Clover-timothy hay was the smallest crop in eigh years with 24,657,000 tons, compared with 29,169,000 tons i 1948. The wild hay crop amounted to 12,296,000 tons with Nebraska and the Dakotas the major producing area.

New methods of harvest and storage continued to be mor widely used, particularly the field chopper and grass ensilag The average farm sale price of the 1949 hay crop, all type was estimated at $21.80 per ton baled, compared with $23.6 for the 1948 crop. Though the slightly smaller crop plus a carry over of 15,151,000 tons gave a total supply of 114,270,000 ton compared with 114,974,000 tons in 1948, the tonnage per anima unit was 1.67 compared with 1.68 in 1948. No scarcity was anticipated.

Hayseed.—The 1949 crop of the six major hayseeds (alfalf red clover, alsike clover, sweet clover, lespedeza and timoth totalled 527,700,000 lb., about 8% or 9% above 1948 and th 10-yr. average, but nevertheless appeared likely to be insufficien for 1950 sowing in view of the probable government reque for retirement of 20,000,000 or more acres from tilled crop to grass. The alfalfa seed crop set a new record of 1,895,7 bu. and the lespedeza seed crop was the second largest c record, but the red clover seed crop of 1,262,900 bu. was muc aller than the 1,788,900 bu. of 1948 or the decade average of 54,210 bu. Prices appeared likely to be above or below the her high 1948 level, depending on the scarcity of the par- ular seed. (*See* also SOYBEANS.) (J. K. R.)

ay Fever: *see* ALLERGY.
ealth, Industrial: *see* INDUSTRIAL HEALTH.
earing Aids: *see* DEAFNESS.

eart and Heart Diseases. The year 1949 was notable for one of the most funda- ntal advances in medicine—the emergence of steroid chem- ry from the laboratory into clinical research. In its broadest plications this step made possible basic investigation in the lds of degenerative diseases including those of the circulation, ncer, metabolic disorders and even acute infections. The role the adrenal corticoids in dramatically affecting the course of eumatoid arthritis was reported by P. S. Hench and his asso- tes from the Mayo clinic, Rochester, Minn., and a further port of these investigators showed a beneficial effect in rheu- tic fever with carditis. The preparations used were Com- und E (officially named cortisone—17-hydroxy-11-dehydro- rticosterone), and the pituitary adrenocorticotropic hormone CTH). It was shown that similar benefit could be attained disseminated lupus erythematosus and other diseases. hether or not these hormones merely produce remissions in eases characterized by spontaneous cycles was not yet known t they, or related steroids, may furnish important preventive erapy of rheumatic heart disease when administered early in e course of rheumatic fever.

The role of the adrenal and of adrenal tumours (phaeo- romocytoma) in hypertension was actively studied. Drugs enzodioxane and dibenamine) which temporarily depress the ood pressure were found useful in the diagnosis of such tu- ours by blocking the effect of excess epinephrine produced by e tumour. The artificial kidney, through which it was possible perfuse a patient's blood outside the body, permitted direct idy of humoural pressor mechanisms in hypertension. Purified ctions of veratrum alkaloids (protoveratrine) were shown to ve remarkable but temporary hypotensive effects in patients th high blood pressure.

The mechanisms involved in coronary atherosclerosis were in- stigated in many laboratories. A striking incidence of pre- ture coronary disease was demonstrated in families in whom percholesteraemia was an inherited trait. In the treatment of ute myocardial infarction, loss of blood supply to a portion heart muscle through blocking of a coronary blood vessel by clot, controlled studies showed the advisability of the use of ticoagulants (dicoumarol and heparin) in preventing thrombo- bolic complications.

Surgery of the heart was extended to include joining together pulmonary and azygos veins in patients with narrowing of e mitral valve without pronounced cardiac enlargement or in- eased peripheral venous pressure, but with attacks of water gging of the lung. Plastic operations for the repair of nar- wed mitral valves were attempted with some success by vari- s surgeons. An "artificial heart" or cardiopulmonary machine s described by V. O. Björk from Crafoord's laboratory in eden permitting bloodless operations on the heart in animals, d experimental repair of cardiac valves by venous and peri- rdial grafts was reported by J. Y. Templeton III and J. H. bbon, Jr.

The antibiotics aureomycin and streptomycin were found ef- ctive in certain cases of bacterial endocarditis. In the treat- ent of congestive heart failure, Thiomerin, a mercurial diu- ic which could be given subcutaneously, was introduced; cationic exchange resins added to diets were successful in removing ingested sodium and aiding diuresis; lithium salts as seasoning substitutes for sodium chloride were found dangerous.

Radioactive isotopes played an increasing part in cardiovascular research. Radioactive iodine was used in the treatment of thyrotoxicosis, and in depressing the basal metabolic rate in cases of angina pectoris and congestive failure. (*See* also CHEMOTHERAPY; MEDICINE; VITAMINS.)

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Helicopter: *see* AVIATION, CIVIL.
Herbs: *see* SPICES.

Hess, Walter Rudolf (1881–), Swiss eye and brain specialist, was born at Frauenfeld, Switz., March 17. He was educated at the universities of Lausanne, Berne, Kiel, Berlin and Zürich and obtained his doctorate of medicine in 1906. From 1917 he was director of the Institute of Physiology at Zürich university and from 1931 to 1936 was also director of the scientific station, Jungfraujoch, Switz. In Aug. 1938 he presided over the 16th International Congress of Physiology which was held that year in Zürich. On Oct. 27, 1949, it was announced he had been awarded, jointly with Prof. A. E. Moniz (*q.v.*), the 1949 Nobel prize for physiology and medicine for his discovery of the functional organization of the middle brain in co-ordinating the activity of the internal organs.

Heuss, Theodor (1884–), German public official, was born at Brackenheim, Württemberg, Jan. 31. He studied at the universities of Munich and Berlin and in 1905 obtained his doctor's degree in political science at Munich. He joined the editorial board of Friedrich Naumann's Liberal weekly *Hilfe* (1905–12) and later was the editor of the *Neckarzeitung* at Heilbronn (1912–18). In 1920 he was appointed as lecturer at the newly founded democratic German Political high school in Berlin. He joined the Democratic party and was elected a member of the *reichstag* in 1924. He failed at the election of 1928 but was re-elected in 1930, twice in 1932 and on March 5, 1933. With all other members of the *reichstag*, Social Democrats excepted, he voted in favour of giving Hitler full powers on March 23, 1933. Soon afterward his 20 books (including *Hitler's Way*, published in 1932) were among those which were publicly burned in Berlin. After the dissolution of the *reichstag* in Oct. 1933 Heuss went to Heidelberg where he edited *Hilfe* until its suppression in 1936. After the capitulation of Germany in 1945 he obtained from the U.S. military government the license to publish the *Rhein-Neckar Zeitung* in Heidelberg. In 1948 he was elected chairman of the Free Democratic party and he was a member of the Parliamentary council in Bonn (Sept. 1, 1948–May 23, 1949) that drew up a constitution for western Germany. On Sept. 12, 1949, he was elected first federal president of the German federal republic.

Highways: *see* ROADS AND HIGHWAYS.

Hirohito (1901–), emperor of Japan, was born on April 29, the son of Emperor Yoshihito. For his early career see *Encyclopædia Britannica*. Hirohito was permitted by the Allies to retain his throne after World War II, but he was to be subject to the authority of the supreme Allied commander in Japan. In 1947 he was absolved of war guilt by Allied investigation.

In Jan. 1949 it was disclosed that the U.S. joint chiefs of staff had given Gen. Douglas MacArthur secret orders that Emperor Hirohito should not be prosecuted on any war crime charges. It was also disclosed that all of Japan's World War II enemies, including the U.S.S.R., had agreed in 1945 to exempt Hirohito in order to facilitate Japan's surrender and occupation. However, Sir William Webb of Australia, who presided at the Japanese war crimes trials, asserted that Hirohito should be tried. In Sept. 1949 it was disclosed that Hirohito had written a book about one of his hobbies, the study of deep-sea life; the volume was reported to be on the subject of sea horses.

Hispaniola: *see* Dominican Republic; Haiti.
Hiss, Alger: *see* Law; United States.
Hockey: *see* Ice Hockey.

Hoffman, Paul Gray (1891–), U.S. industrialist and Economic Cooperation administrator, was born in Chicago, Ill., April 26 and studied at the University of Chicago. In 1911 he became a salesman for a Studebaker dealer in Los Angeles, Calif., becoming first sales manager then district branch manager for Studebaker in Los Angeles by 1917. After serving in World War I he purchased the Studebaker retail branch in Los Angeles, and in 1925 he went to South Bend, Ind., as vice-president of the company. After the company went into receivership in 1933 he and Harold Vance, another vice-president, as receivers successfully reorganized it and he served as Studebaker president from 1935 to 1948.

An organizer of the Committee for Economic Development, he served as chairman of its board of trustees from 1942 to 1948. Pres. Harry S. Truman appointed him Economic Cooperation administrator April 5, 1948, to supervise the European Recovery program. From the beginning Hoffman urged that the nations of western Europe reorganize their trade before the E.R.P. cutoff date in 1952, and he appeared before congress to urge funds for the program. In the interest of free trade he frankly opposed the British-Argentine bilateral trade agreement in 1949, though conceding Britain had no alternative. He said Britain's economic solution was to triple exports to the U.S. by more efficient production and livelier merchandising. In November he warned western European nations that they must move more swiftly toward "integration of the Western European economy," mass production, low prices, free trade and nondependence upon the United States.

Hogs: *see* Livestock.

Holland, Sidney George (1893–), New Zealand prime minister, was born at Greenlade, New Zealand, Oct. 18. He was educated at Christchurch West high school and served in World War I. A businessman and farmer, he successfully contested his father's seat of Christchurch north in the house of representatives in 1935. He was re-elected for the same constituency in the general elections of 1938 and 1943, and for Fendalton in 1946 and 1949. A member of the National (conservative) party, he was elected its leader and also leader of the opposition on Nov. 26, 1940, in succession to Adam Hamilton, who was a member of the war cabinet. In the general election on Nov. 30, 1949, the National party obtained 46 seats in a house of 80 members and thus brought to an end the Labour party's 14-year period of office. The governor general, Sir Bernard Freyberg, invited Holland to form a government and he was sworn in on Dec. 13. He took the portfolio of minister of finance in addition to t premiership, and declared that close and enduring relationshi with Britain and the other countries of the British empire wou be one of his governing principles.

Holland: *see* Netherlands.
Home Building, Federal: *see* Housing.

Home Economics. Membership in the American Hom Economics association increased in a sections in 1949. Professional memberships numbered 19,38 about 1,608 over 1948; affiliated college clubs increased in num ber to 407 and homemakers' groups to 47. The program f the year, adopted at the 1949 national meeting included:

1. Developing ways and means of interpreting democratic family li to people of the U.S. and other lands and increasing efforts to unde stand and appreciate cultural differences.
2. Combining forces and co-operating actively with other organizatio engaged in the study and improvement of family life.
3. Emphasizing the necessity for training boys and girls, men a women for homemaking and for professions in home economics throu effective guidance.
4. Recognizing the demands of a buyer's market facing the fami and stressing wise buying.
5. Supporting legislation to improve family living on local, state, n tional and international levels.
6. Encouraging investigation and research in all areas of home ec nomics, particularly in the study of relationships in homes and famili

A delegation of home economists represented the associati at the 7th International Congress of Home Economics in Stoc holm, Swed., in August. During the year the Korean, Gree and Philippine home economics associations were affiliated wi the American association.

A five-year study by the committee on criteria for evaluati college programs of home economics culminated in the public tion of a book, *Home Economics in Higher Education.*

Bureau of Human Nutrition and Home Economics.—T bureau continued its research in food and nutrition, textiles a clothing, and housing and household equipment. The first r ports of a nation-wide economics study of urban diets we published, and a study of rural diets was also reported. A tw year study of the breakfast meal was completed. Research developing chemical and microbiological methods for the qua titative determination of the ten essential amino acids w condensed for easy reference in a new technical publication. textiles, the bureau investigated the physical properties of plat fabrics—a knit fabric construction with two yarns, one on t face, one on the back of the fabric. Investigations of operati characteristics and performance of home freezers yielded help data for refrigerating engineers and provided facts for a pu cation on the selection and use of freezers.

Home Economics Extension Service.—As a result of t program, more than 1,500,000 women reported improving fa ily diets, through better selection, preparation and preservati of food. In addition, 15,252 schools were assisted in establi ing and maintaining hot lunches. Other women received h with housing problems. About 210,000 women and 26,000 m participated in child development and family relations p grams. Through 4-H club programs, the service reached 1,0 000 girls. Approximately 3,000 white and 375 Negro ho economists directed these county and community progra with help from 520,000 local leaders.

Public Schools and Colleges.—Most junior and senior h schools, except those with the smallest enrolment, were empl ing home economics teachers by 1949. About 1,750,000 g and boys were enrolled in home economics in approximat 19,000 high schools. Approximately half the high schools ceived federal funds for part payment of home econom teachers' salaries. Adult classes increased 30% over the p

us year; approximately 575,000 adults in cities, towns and
al communities studied various phases of home economics.
rolment in colleges offering home economics degrees showed
e change, but there was some increase in the number of
ior colleges teaching home economics.

Two national organizations of home economics pupils, the
ure Homemakers of America and the New Homemakers of
erica recorded total membership of approximately 300,000.

The home economics education service worked with state and
supervisors of home economics, teacher trainers and home
nomics personnel in teacher training institutions on planning,
reloping and evaluating home economics programs in schools
l colleges.

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(K. GR.)

nduras. A republic of Central America, Honduras is
bounded by Guatemala, El Salvador and Nicara-
. Area: 59,160 sq.mi. Pop. (1945 census), 1,200,542, includ-
approximately 35,000 tribal Indians. As of June 30, 1949,
population was (off. est.) 1,325,936. The capital is Teguci-
pa (pop. 62,263 in 1949). Other principal cities are Co-
yaguela (16,907), La Ceiba (13,456); Puerto Cortés (8,837);
Pedro Sula (24,425) and Tela (11,544). Religion: Roman
tholic. Language: Spanish. President in 1949: Juan Manuel
lvez.

istory.—The year 1949 opened with the country's first new
sident since 1933, when Juan Manuel Gálvez took over the
vernment. In his inaugural address Jan. 1, President Gálvez
newed his campaign pledges to support agriculture, the elec-
ication program, the tourist trade, improvement of educa-
n, road-building, and hemispheric co-operation.

Honduras' first national income tax, with rates graduated up
15%, was enacted by the congress in a special session in
tober, and proposals to set up a central bank were bound
r to the regular session in December. In the face of consid-
ble popular opposition the government in November ap-
ved a contract with the Tela Railroad Co. (a subsidiary of
United Fruit Co.) for a 25-year concession for the develop-
nt of cacao, palm oil and abacá-fibre plantations in Honduras.
Plans were announced by the Standard Fruit and Steamship
for the reopening of banana plantations in the Trujillo and
erto Castilla districts. Work was begun during the summer
a $200,000 project to pipe 26,000,000 gal. of water daily to
gucigalpa from a distance of 11 mi.

ducation.—In 1949 it was announced that there were 1,700 primary
ools with 83,619 students, 27 secondary schools with 1,340, 24 normal
ools with 1,541 and 14 commercial schools with 1,073 students. The
tional university enrolled approximately 500 and the Pan American
ool of Agriculture, 171. The national budget in 1948 allowed 3,172,-
.12 lempiras for public education.

inance.—The monetary unit is the lempira, officially valued at 49.02 cents U.S. on Nov. 15, 1949. The 1948–49 budget was increased from 19,813,904 lempiras to 21,488,662 lempiras, and the 1949–50 budget provided for expenditures of 20,244,162 lempiras. On Dec. 31, 1948, total money in circulation amounted to 16,738,573 lempiras. At the same time the foreign debt stood at 1,762,516 lempiras. There were two banks with six branches and capital, resources and deposits totaling approximately 27,000,000 lempiras.

Trade and Resources.—Exports during the fiscal year 1947–48 amounted to $19,128,342.44 U.S.; imports, $34,905,933.08. The United States supplied 78.8% of the imports. The chief exports were: bananas ($7,278,000), lumber and logs ($2,642,500), unrefined silver ($1,864,700), coffee ($1,223,000), coconuts ($917,000), unrefined gold ($424,200), hogs ($357,800), rice ($236,300), corn ($212,300), plantains ($112,800), nonessential vegetable oils ($58,400) and refined gold ($8,500). The total value of agricultural production was estimated in 1948 at 20,062,000 lempiras. Cattle of all classes numbered 2,720 head. The total value of mineral products was approximately 4,000,000 lempiras, about three-fourths silver and one-fourth gold.

Communications.—In 1947 the banana area of the north was served by 922 mi. of railroad; the main towns by 1,201 mi. of highway and 63 airfields. Public telephone lines measured 2,646 mi. There were six radio broadcasting stations in 1948. At the end of the same year there were 959 automobiles, 976 trucks and 26 buses registered.

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Honduras, British: *see* BRITISH HONDURAS.

Honey: *see* SUGAR.

Hong Kong. British colony on coast of China consisting of the colony (Hong Kong Island, the ceded territory of Kowloon and Stonecutters' Island) and the New Territories (the remainder of the Kowloon peninsula and numerous islands) leased from China in 1898 for 99 years. Area: colony 36.5 sq.mi., New Territories 355 sq.mi. Pop. (mid-1948 est.): 1,800,000. Governor, 1949: Sir Alexander Grantham.

History.—Proposals for the institution of a municipal council partly chosen by popular election and for the reduction of the official membership of the legislative council to seven, giving an unofficial majority of one, which had been approved and were expected to come into effect in 1948, were, in fact, postponed. In 1949 new proposals were put forward with the unanimous support of the unofficial members of the legislative council; they involved the deferment of the municipal-council proposals and the reconstitution of the legislative council on broader lines and with some popularly elected members (the numbers suggested were 11 unofficial and 6 official members).

But the position in Hong Kong during the year was dominated by the sudden successes of the Communist regime in China. British military reinforcements were dispatched as a precaution against possible incidents. With the capture of Canton by the Communists, the operation of the Canton-Kowloon railway was temporarily suspended.

The nature and scale of the colony's trade made difficult the application of the strict exchange restrictions in force elsewhere in the sterling area; and in April the government banned all dealings in and the possession of gold without the express permission of the governor as, in spite of rigid import and export regulations, there had been an active gold market with prices well above those laid down by the International Monetary fund.

The long-awaited report by Sir Leslie Patrick Abercrombie, the town-planning expert who visited Hong Kong in Nov. 1947, was released in September. He recommended, *inter alia,* a tunnel between the island and the mainland, a realignment of the railway and the moving of the armed forces services from their quarters in the centre of the city.

Finance and Trade.—The unit of currency is the Hong Kong dollar, valued, as of Nov. 15, 1949, at 17.5 cents U.S. Budget (1948, in Hong Kong dollars): revenue $ 136,093,240; expenditure $ 113,960,826. Foreign trade (1948): imports $ 2,077,538,615; exports $ 1,582,739,710. (Jo. A. HN.)

Hoover, Herbert Clark (1874–), the 31st president of the United States (1929–33), was born on Aug. 10 in West Branch, Ia. For his early career see *Encyclopædia Britannica.*

In 1947 President Harry S. Truman chose Hoover to head the bipartisan Commission on Organization of the Executive Branch of the Government, which was to survey the operations of the federal government and to recommend ways of simplifying its structure. Hoover said that this would be his last public service. When the final session of the 12-man commission was held in 1949, after 19 months of hearings and investigations, the work was hailed as the most exhaustive study of the U.S. government ever made. Its chief recommendations involved ways of clarifying the chain of command in executive offices of the government, to assure adequate control by the president, and methods of improving the executive machinery through better delegation of authority, so as to free top executives of the government for policy, rather than detail, matters. Hoover suggested that acceptance of the commission's recommendations would save taxpayers $3,000,000,000 a year. Legislation embracing some of the commission's recommendations was introduced into congress, and in other instances executive action was taken to implement its findings.

Hormones: *see* ENDOCRINOLOGY.

Horse Racing.

The keen rivalry between the Greentree stable's three-year-old colt, Capot, and the Calumet Farm's Coaltown made the 1949 campaign on U.S. turf a memorable one although attendance and parimutuel figures continued to drop for the third straight year. Despite the downward trend in spending at the nation's tracks, the season proved a financial success and as the year ended official figures were expected to reveal betting that touched $1,400,000,000 and attendance close to 23,000,000.

It was generally agreed that Capot was the horse of the year, but it took triumphs over Coaltown in the Sysonby Mile and the Pimlico Special to clinch the honour for the Greentree colour-bearer. Although rated the nation's top sprinter, Capot won laurels in the three-year-old ranks by only a slight margin, being pressed by Calumet's fleet Ponder through the season.

Capot, the son of Menow, won 6 of his 16 starts and $238,335, annexing the Preakness and the Belmont Stakes to swell his earnings. Capot, however, had little if anything on Ponder, for that Calumet Farm racer scored stirring victories over Capot in the Kentucky Derby, the Peter Pan Stakes and the Arlington Classic. The edge went to Capot only after his 13-length triumph in the Pimlico Special, a race in which Ponder was withdrawn. Ponder earned a total of $321,825 for the year.

Coaltown gained undisputed ranking as the leading handicap division horse of 1949. Coaltown looked almost unbeatable for most of the long campaign, winning 12 of his 15 starts and earning purses that totalled $276,125 in addition to breaking sundry records. Coaltown set a new world mile mark of 1 min. 34 sec. for his most notable clocking of the arduous campaign. This time, coming in the Whirlaway Stakes at Washington park, Homewood, Ill., on Aug. 20, shattered the former standard around turns set at 1 min. 34$\frac{2}{5}$ sec. by the great Equipoise 17 yr. before and equalled by Prevaricator in 1948.

The Kentucky Derby at Louisville, Ky., on May 7 furnished one of the season's major surprises when Ponder, after getting away from the barrier slowly, worked his way through the field to lead home 14 rivals. Ridden by Steve Brooks, the 16 to 1 shot triumphed by three lengths, with Capot second and Isador Bieber's Palestinian third. F. W. Hooper's heavily favoured Olympia crossed the finish line sixth. The 75th jubilee running of the U.S. blue-ribbon classic proved the last Derby for Col. Matt J. Winn, who had seen every running of the colourful event since its inception in 1875. He died in October.

A stirring stretch duel in the rain marked the rich Preakness Stakes at Pimlico in Baltimore, Md., on May 14 when Capot, at odds of 5 to 2, was forced to a new track record to win by a head from a fast-closing Palestinian. With Jockey Ted Atkinson up, Capot raced the mile and three-sixteenths in 1 min. 56 sec.

Capot and Atkinson then triumphed in the Belmont Stakes at Belmont park on June 11 as Ponder, the 4 to 5 favourite, trailed by only a half length. Palestinian grabbed the show money, being another half length back.

Despite Coaltown's sparkling 1 min. 34 sec. world mile record in the Whirlaway Stakes, and despite the fact that he twice ran under the old mark and once equalled the world standard for a mile and a quarter, he proved no match for Capot in the Sysonby Mile and the Pimlico Special, both of which the Greentree racer easily won.

Ponder's earnings of $321,825 made him the year's leading money winner in U.S. racing. Capot, Ponder, Palestinian and Olympia were the best of a fine crop of three-year-old colts and Calumet's Wistful and Two Lea led the three-year-old fillies. Hill Prince, Guillotine and Middleground shared the big events for two-year-old colts. The King Ranch's Hopeful Stakes winner Middleground started off as the outstanding two-year-old colt, but was retired after the Hopeful; thereafter C. T. Chenery's Hill Prince forged to the front ranks. Then Greentree's Guillotine carried off the rosette in the Futurity, the richest and most coveted prize for two-year-olds, to gain a place with the year's best.

Alfred Vanderbilt's Bed o' Roses paced the two-year-old fillies, closing the season with a brilliant sweep of the east's richest events for fillies, the Matron, Selima, Marguerite and Demoiselle Stakes to bring her earnings for the campaign to $199,200.

The Calumet Farm's string of stars again earned more than $1,000,000 in purses to lead all rival stables, Willie Molter was tops among the trainers on the basis of the most winners saddled and young Gordon Glisson was generally acknowledged as the outstanding jockey of the campaign.

Harness racing also enjoyed a successful season, with crowds keeping the turnstiles humming and the trotters and pacers offering the keenest type of competition on an ever-growing program. The richest purse was the $69,791 Hambletonian Stakes won by Miss Tilly, a fast trotter belonging to Charles Phelli of Greenwich, Conn. Tilly, with Fred Egan at the reins, won this blue-ribbon classic of harness racing at Goshen, N.Y., on Aug. 10 in two straight heats.

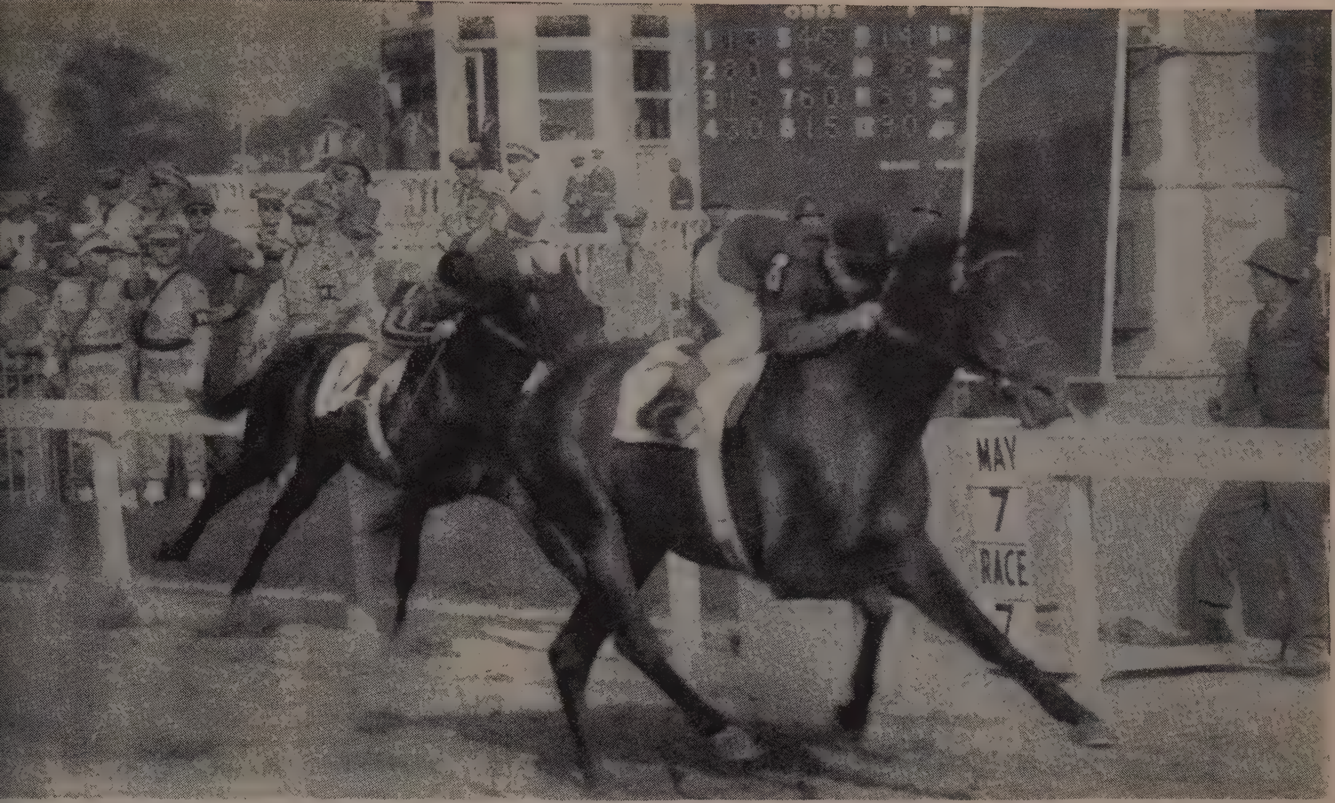
The $58,922 Kentucky Futurity was captured by Saunder Mills' Bangaway. William H. Cane's pacer Good Time annexed the $58,281 Little Brown Jug, and Harrison Hoyt's Demon Hanover triumphed in the $50,000 Roosevelt two-mile trot.

Good Time, with a series of unusual performances for a three-year-old that included a record of 1 min. 58$\frac{4}{5}$ sec., was voted the harness horse of the year. Bangaway was the top money winner, Clint Hodgins of Clandeboye, Ont., was the leading driver in number of winners and Frank Ervin of Aiken, S.C. was first among the reinsmen on the basis of money won.

New York state tracks proved the most popular in harness racing. According to figures released by the United States Trotting association, the pari-mutuel handle showed an increase of $8,810,294 over that for 1948 while attendance was up by 422,184. Roosevelt raceway handled $95,283,088 for a gain of 7.7% and showed a 15% rise in attendance to 2,281,534.

(T. V. H.)

Canada.—Increased popularity in racing was reflected in the 1949 statistics, with comparative 1948 statistics in parentheses



NDER, winner of the 75th Kentucky Derby, crossing the finish line at urchill Downs, Louisville, Ky., on May 7, 1949. Coming in second is Capot, 49 winner of the Preakness and Belmont Stakes

uring the 355 (349) days of racing at the tracks of 29 (28) cing associations which held 2,750 (2,632) races, a total of 9,550,478 ($56,178,491) was wagered. From the $59,550,478, e racing associations retained $5,263,551, of which $2,957,310 is paid in prize money ($2,755,400 in 1948), the provincial vernments collected $5,742,262 in pari-mutuel taxes and $48,4,664 went back to betters. The all-time betting high was in 21, when $75,110,551 changed hands. (C. Cy.)

Great Britain.—The National Hunt season in Great Britain d Ireland was favoured with a mild winter in 1948–49; the ly race of importance to be affected by frost was the Cheltenm Gold Cup, postponed from March to April. The winner, as 1948, was F. L. Vickerman's Cottage Rake. The Champion urdle Cup was won by Hatton's Grace, ridden, like Cottage ake, by A. Brabazon and prepared by the same trainer, M. V. Brien. O'Brien accomplished the rare feat of training the nners of the three main events at Cheltenham, for he also ined Castledermot, who won the National Hunt steeplechase dden by Lord Mildmay. The Grand National was won by . F. Williamson's Russian Hero, trained by G. Owen at Mals, Cheshire, and ridden by L. McMorrow.

In flat racing the three-year-olds, both English and French, ere of unusually poor quality, with the exception of the rinter Abernant, unrivalled over five furlongs, and the Two housand Guineas and Derby winner Nimbus, who did not race ter his Epsom success. There was a remarkable finish to the erby, for, after Nimbus, owned by Mrs. M. Glenister, and rd Derby's Swallow Tail had disputed the lead for most of e way, they were joined close home by Amour Drake and in inish in which all three horses came off a true line, the photoaph had to be inspected—for the first time in this historic ce—to show that Nimbus had beaten Amour Drake by a ad, with Swallow Tail a head away third. Nimbus was trained Newmarket by G. Colling and was ridden by E. C. Elliott. Ridge Wood who won the St. Leger was subsequently beaten in the King George VI Stakes at Ascot by M. Boussac's Marveil.

Despite the mediocrity of the colts, the fillies were in general well behind them; an exception was, of course, the Grand Prix winner Bagheera, and no less important, Boussac's Coronation V, who won the French Thousand Guineas and in October the Prix de l'Arc de Triomphe, in 1949 worth 3,000,000 fr.

The Epsom Oaks was won, like the Thousand Guineas, by Musidora.

Black Tarquin, winner of the previous year's St. Leger, won several races early in the season, but had to bow in the Ascot Gold Cup before Lord Derby's Alycidon, generally considered one of the finest stayers of his time. Alycidon also won the Goodwood and Doncaster Cups and was the first horse to win all three races since Isonomy in 1879. (M. A. Md.)

Horses: *see* Livestock.
Horse Shows: *see* Shows, Animal.

Horticulture.

Record-breaking cold weather on the Pacific coast of the United States ushered in the year 1949, with heavy damage to citrus and other commercial crops and to ornamentals. Three inches of snow fell in El Monte, Calif., important seed-producing region. Arizona had a 50% loss in oranges and grapefruit. Vegetables and especially the cabbage seed crop in the Pacific northwest were hard hit. Montana and some other western states and most of the eastern states suffered severely from drought throughout the season after May.

Despite weather conditions, the apple crop was very large throughout the country—the largest since 1939. Wholesale prices fell off sharply, and growers were faced with inadequate storage facilities. Retail prices, however, did not drop correspondingly. Normal exports, which in years before World War II had taken care of surpluses, were nonexistent, but the U.S. government subsidized large shipments to European countries. A similar plan helped farmers with the large pear crop. The U.S. department of agriculture also bought apples and pears for use in a national school lunch program.

Insect pests continued to take their toll, amounting to an estimated $95,000,000. Grasshoppers overran parts of the west, but excellent control was finally found in chlordane and toxaphene, new spray materials. The European corn borer continued to spread throughout the west and remained a serious pest in the east. However, DDT was found very effective. With this remedy, even home gardeners were able to grow sweet corn with success. DDT also proved a boon to the apple growers of the northwest, reducing the number of spray applications from six, or even eight, to three. Chlordane proved as successful as DDT in controlling the Japanese beetle and was cheaper. Applied to grass and watered in, experts expected it to be effective for two or three years. This beetle began advancing rapidly into the northern part of New England. Parathion was a new insecticide widely experimented with and seemingly effective in controlling orchard mites, pear *Psylla* and certain scales. It was tried in greenhouses with excellent results, except that ferns and a few other plants seemed to be injured. The citrus black fly appeared in Mexico as a serious threat, and U.S. scientists worked with the Mexican government to check its spread.

Gladiolus growers felt that they had found a control in Spergon for the fusarium disease (a rot), which sometimes destroys half the crop. It was applied as a dust after cleaning.

A large increase in the number of wild deer became a problem in several states, notably New York and Maine. A blueberry grower in the latter state found that the animals had eaten the entire crop on five acres. The used of coated vegetable seeds by commercial growers increased, sharply reducing the amount of labour needed for thinning.

The All-America gold medal award went to the new rose, Fashion, which was also awarded the gold medal of Bagatelle, France, and the gold medal of the British Rose society. It was the first rose of the floribunda type to win the All-America award. The colour is coral, overlaid with gold.

Netherlands' bulb growers began shipping early, and lower prices prevailed. These bulb imports created a serious problem for growers in the northwestern states of the U.S., some of whom began pressing for quotas on narcissus bulbs grown for forcing. However, some Maine farmers began experimenting with Dutch bulbs as a supplementary crop.

A long drought reduced the size of the crops in many countries. Parts of Italy had no rain for ten weeks, and water for irrigation was in short supply. Still, the fruit crops in most of Europe were larger than in 1948, although smaller than prewar. Help from the U.S. was seen in improved cultural practices, especially in the use of tractors. The practice of dusting with helicopters, purchased under the European Recovery program, was begun. The Netherlands, which largely escaped the drought, harvested large crops of bulbs and seeds, except that some growers lost heavily from attacks of the cabbage fly. Eighty growers were recorded as competing for foreign trade. A plan to increase the fertile areas of southern Netherlands was carried out by the construction of a compost factory to produce 137,000 tons of compost a year from refuse.

England suffered a heat wave, but the floral industry flourished surprisingly well and the great Chelsea flower show in May reached prewar size and attendance, making it the greatest show of the kind in the world. The British government permitted some increase in flower-seed imports as well as a greater proportion of flowers over vegetables in greenhouses. It also announced the setting up of six horticultural research stations.

Australia suffered from strikes, but more than 1,000,000 cases of apples and 500,000 cases of pears were shipped to the United Kingdom. New Zealand had serious floods in August, delaying fruit shipments. The Union of South Africa dropped its ban on the importation of tomato seed, imposed in 1945. Japan began shipping flower seeds by air to other countries. Canada produced 10,000 tons of cherries, twice the amount of the prewar average, but this crop was also up 10% in all the principal producing countries. (*See* also BOTANY; ENTOMOLOGY; VEGETABLES.) (E. I. F.)

Hospitalization Insurance: *see* HOSPITALS; INSURANCE.

Hospitals.

A new peak in construction of hospital facilities in the United States was reached during 1949. The first of the 1,000 construction projects approved for federal aid since passage of the Hill-Burton act in 1946 were completed. Construction expenditures approved under the act by Nov. 1 1949, totalled $640,000,000 and involved 35,000 general hospital beds alone. An amendment to the act, passed by congress during 1949, extended the program until June 1955, and doubled the annual federal contribution to $150,000,000. Numerous new hospitals and additions to existing hospitals were being constructed through community initiative, independent of federal aid. Construction costs fell off from the record average of $16,000 per bed in 1948 to an estimated $13,500 per bed during the last months of 1949.

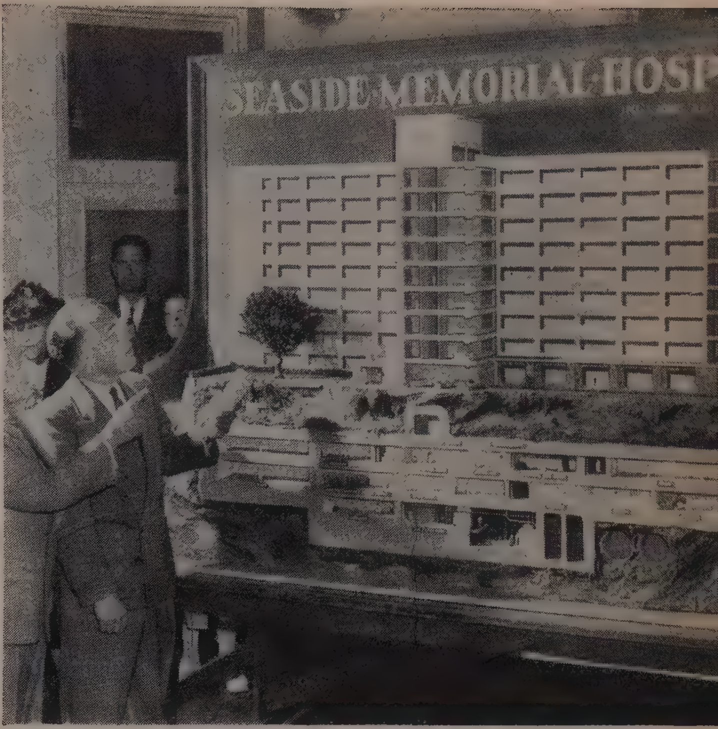
The estimated book value of U.S. hospitals in 1949 was $6,500,000,000, equal to a $45 investment for every person in the United States.

The shortage of nurses and other hospital personnel eased somewhat during the year, in keeping with the generally stabilizing employment situation. Many hospitals initiated training programs for practical nurses and other semiskilled personnel. Wage levels and employment conditions remained about the same as in 1948. Nonprofit general hospitals in 1949 averaged 173 employees for each 100 patients, as compared with 161 per 100 patients in 1948. An estimated 36,669 new students entered fall classes in 1,211 schools of nursing—a gain of about 1,00 students, despite a decrease of 34 in the number of schools.

Hospital patients, a survey of the American Hospital association showed, were paying an average 83% of the actual cos of hospital care they received. The remaining 17% was m through gifts, payments from government and charitable agencies, or comprised hospital deficits. It was estimated that fro 1945 to 1948 general hospitals in the United States gave almo $700,000,000 in hospital care for which patients did not pa directly. Average costs per patient day continued to rise fast than daily room rates or government payments for indige care. In some states, new equitable reimbursement contrac were secured between hospitals and state governments.

Organization of the Commission on Financing Hospital Ca was begun by the American Hospital association. This tw year study would investigate the costs of providing adequa hospital services in the United States, and determine the be systems of payment for such services. Like the previous Commission on Hospital Care, the new study would be financed a operated independently of the association, under 27 commissi members representing a cross section of the U.S. public.

The outstanding event of the year in hospital prepayme plans was the establishment of the National Blue Cross association. This was a stock insurance company to underwrite excess insurance for individual Blue Cross plans in the enrolme of national accounts. In its first five months of operation, t Inter-Plan Service Benefit bank paid almost $200,000,000 hospitals for about 25,000 patients cared for by host plans outside the area of their home plans. By the end of 1949, it w expected that more than 35,000,000 individuals would be members of Blue Cross plans in the United States and Canad These were enrolled through more than 260,000 industries, co



MODEL of a proposed atomic bomb-proof hospital with nine floors above ground and three below, being inspected at Long Beach, Calif., in 1949. Subterranean rooms were to be encased in eight feet of concrete and lead shielding, for protection against atomic radiation and concussion

ercial organizations and similar groups. At least 61,000,000 ersons in the United States had hospital prepayment cover-ge of some sort. (*See* also VETERANS' ADMINISTRATION, U.S.)

In Canada during 1949, the development of most interest was ne National Health program which provided extensive financial ssistance for hospital construction, education of personnel, and pecial grants for tuberculosis, mental care, cancer control, gen-ral public health and other special services. As the provinces ad to contribute at least a similar amount for construction rojects, the stimulation to construction was considerable. Since pril 1, 1948, projects for the construction of 15,000 additional eds had been approved.

The other major development in Canada was the inauguration n Jan 1, 1949, of the Hospital Insurance service in British olumbia. This was a state-sponsored hospitalization plan cov-ring practically all citizens. In many respects the plan was imilar to that which had begun in Saskatchewan two years arlier. In both cases hospitals were being paid their approxi-nate costs, and in both instances reasonably satisfactory ar-angements between the hospitals and the government were stablished. In both provinces, however, costs rose beyond nticipated figures and premiums had to be increased to sub-cribers, with a goodly portion of the cost being still absorbed y the province.

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Great Britain.—The new regional boards and hospital man-gement committees appointed in Great Britain under the Na-ional Health Service act were six months old at the beginning f 1949. When the first budgets were submitted to the minister f health early in 1949 it was found that the cost of the hospital pecialist and ancillary services had risen from £87,000,000, as stimated when the National Health Service bill was before arliament in 1946, to £170,000,000. In March the minister alled for economy in terms which meant that estimates would ave to be pruned and there was much consternation in hos-ital circles. The wisdom of these cuts in the estimates was otly contested throughout the summer. It was found that in nany hospitals greatly improved arrangements were desirable in ne outpatients department and in the systematic handling of nedical records, but that changes could not be effected without ncreased staff and expenditure. Payment of doctors who had ormerly given their services gratis, better pay and shorter hours or nurses and revised scales for technicians and administrative taff all played their part in increasing the bill.

The hospital management committee to whom the day-to-day ontrol of the hospitals was entrusted showed a desire to man-ge their own affairs without too much control from the regional oards. Difficulty arose, however, from the financial system, vhich lacked any objective standard by which estimates could e assessed. Estimates were therefore liable to be pruned both y the regional board and by the ministry.

In the big cities there was heavy pressure on accommodation. Iuch of the difficulty was attributed to medical discoveries vhich had lengthened the expectation of life and created a pecial problem for the hospitals. A number of hospitals set up pecial geriatric departments for dealing with the aged on more ctive lines than in the past. The increased call upon hospitals lso affected outpatient attendances; it was known that at some ondon hospitals outpatient attendances had increased by more han 100,000 in the first year of the new service.

Discussions at the International Hospital congress held in msterdam, Neth., showed that the need for some form of egional grouping of hospitals was recognized in almost all coun-ries; thus, in France, hospitals were being surveyed and classi-ed with the object of developing a regional plan; in Norway, ospitals were being organized in some 20 regions; in Denmark they were already grouped in some 18 regions and in Italy, too, under the new constitution, there were to be hospital regions.

FILMS OF 1949.—*The Sydenham Plan* (Association Films). (A. G. L. I.)

Hotels. Three spectacular happenings and developments during 1949, the opening of the new Shamrock hotel in Houston, Tex., the acquisition of the Waldorf-Astoria in New York, N.Y., by the Hilton interests and the continued extravagant expansion of resort hotel construction in Miami Beach, Fla., did little to relieve what was otherwise an uneventful year in the hotel industry. The Shamrock hotel, according to report, cost more per room to build than any hotel ever constructed. Control of the Waldorf-Astoria was acquired at a lower price per room and per dollar of original cost than any similar deal.

In general, the industry did little to redeem its record of being traditional, complacent and ultraconservative in comparison with other heavy capital enterprises. Little true progress was made in one of its most perplexing problems, cost control and accurate cost accounting.

One of the national hotel accounting firms issued a bulletin in November with the heading "Same Old Trouble in the Food Department!" It was difficult to find methods of securing useful information without the risk of being lost in a maze of unimportant statistics. One hotel began to search for an actuarial mathematician to see if some simple formulas could be evolved to give management quick and concise data.

Nor was there great imagination revealed in the expenditure of many millions of dollars for rehabilitation. There were attempts to compromise between modern and traditional architecture and decoration without achieving the best points of either. Except in Miami Beach, none of the smaller hotels constructed during 1949 took advantage of the immense strides in architecture; and even in that area very little appeared that was truly notable except in lavishness. Architectural firms specializing in hotel design did some creditable work but were apt to repeat their motifs and methods.

On the financial side, 1949 saw a continuation of the trends evident in preceding years. Room occupancy was down in varying amounts in various areas, the national average being about 4 to 5%, according to preliminary estimates. In spite of increased competition and decreased occupancy, there was no break in room rates.

Restaurant receipts showed varying tendencies, in some cases up, in some cases down, usually according to the alertness of management; but beverage and bar business continued downward trends which began in 1946. While occasionally prosperous, nightclubs in hotels were increasingly difficult to operate on a profitable basis and so-called supper spot attractions decreased in box office appeal as well as in salaries.

Wages, taxes and some food costs increased during the year; rehabilitation, except for labour, was not quite as expensive; net profits were down to an extent not yet revealed at the close of the year, but not to an alarming degree; but the margin between revenue and operating charges still decreased.

The one wholesome achievement evident throughout the entire industry was the reduction of funded debt, and an increase in current net worth and in equities. Hotels used their profits, though dwindling, for decrease of obligations as well as for improvement of the properties and additions to laboursaving devices, to put the industry as a whole in better condition to face whatever the future might bring. (E. By.)

Great Britain.—In Great Britain 1949 was another difficult year for hotels, restaurants and inns. Costs of conducting establishments increased all around; the most severe burden arose from the regulations of the Catering Wages act, 1943. As regards licensed residential premises, after prolonged representations by the employers, an amending order was issued giving certain reliefs. These did not, in the judgment of the proprietors, go far enough to restore flexibility to a wage structure of permanent application, to permit more normal services to be renewed and maintained.

Two matters of major importance to hotels, restaurants and inns which should be mentioned were: (1) 1949 was notable for another substantial increase in the number of visitors from overseas, particularly from the United States; the Travel association stated that there were some 560,000 tourists, earning for Great Britain £55,000,000—a record; (2) on the other side of the picture there was an exodus from Great Britain on a considerable scale; many persons wishing to visit the continent again after the long war years and especially as hotels and restaurants there were able to offer more attractive meals.

Indeed, in Britain, establishments at the end of the year were still subject to the severe rationing regulations of the war period almost in their entirety. The greatest disappointment was that the minister of food did not see his way to remove, or at least modify, the Meals in Establishments order, with its 5*s.* maximum and complicated build-up, where applicable, of a house charge, charges for meals served in private rooms, dancing and cabaret and service.

The most satisfactory feature perhaps was the continued recognition by the government of the important place that hotels, restaurants and inns occupied in the national economy, ranking first again among the major industries as dollar earners. For instance, the Licensing act, 1949, created new permitted hours during which alcoholic liquor could be served until 2:30 A.M., where dancing or cabaret entertainment was provided.

The government-appointed British Tourist and Holidays board, with its separate hotel and tourist committees, continued to work to attract more overseas visitors and to assist the industry to cater for them. One of its activities was a hygiene campaign among catering establishments. The new National Council for Hotel and Catering Education set up a Hotel and Catering institute, with the object of creating professional status for hotel keepers and caterers, properly trained and certificated. (H. C. Ce.)

Housing.

Home building in the United States established an all-time record in 1949 when work was started on more than 1,000,000 new family dwelling units of all types, exclusive of farm housing. After lagging behind the previous year's totals, month by month, through June, housing construction surged sharply upward to establish new monthly records for each of the last six months of 1949 and a record total for the year. The previous high figure of 937,000 established in 1925 was exceeded by more than 60,000 units.

Forecasts of both private and public agencies at the beginning of the year predicted a drop of 50,000 to 75,000 units rather than an increase of like proportions. Monthly figures for the first half of the year bore out these predictions, beginning in January with a drop of 4.9% from Jan. 1948 and showing steadily mounting losses through March when the monthly total was down 18.8% in comparison with the previous March. The next three months were likewise below comparable 1948 figures, but by narrowing margins with June coming to within 2.2% of the 1948 figure for that month. Nevertheless the first six months' figure of 546,100 new dwelling units started was still 4% below the first half of 1948, despite the fact that it included 9,600 new units of government financed and subsidized public housing which represented a jump of 350% over the public housing started in the first half of the previous year. From this lagging start, home building went on to establish a new record high fo each of the last 6 months of the year and to achieve the long sought postwar goal of 1,000,000 homes begun in a single 1 month period.

Contributing factors in the upswing were somewhat lowe residential construction costs, easing of mortgage financing, a substantial increase in the production of rental units and a greater emphasis on the lower-cost house. By Aug. 1949 residential construction costs were reported by the Housing and Home Finance agency to be at the lowest point in 20 month and almost 8% below the Oct. 1948 peak, as measured by th department of commerce national index (based on the Boekh index). Bureau of labour statistics average costs of producin privately financed one-family houses begun in June 194 amounted to $7,675—exclusive of land, site improvements selling expense, profit and other nonconstruction items—as compared with a June 1948 estimate of $8,050. The comparabl figure for 1940 was $4,075.

Availability of mortgage financing, which had been shrinkin since the fall of 1948, particularly with regard to G.I. hom loans carrying a maximum 4% interest rate, received a powerfu impetus in July. The secondary market for G.I. and FHA (Federal Housing administration insured) mortgages was increase 50% when congress gave the Federal National Mortgage association (more popularly known as Fanny May) an addition $500,000,000 for the purchase of such mortgages. Fanny May previous limit of $1,000,000,000 was all but exhausted whe congress acted.

At the same time, congress extended FHA's authority to insure 90% mortgages on rental housing under Title 608 whic undoubtedly contributed substantially to the increase in t construction of apartments. The 1949 building of rental uni constituted 25% of the record home building total and was t highest for any year since the 1920s. In the first ten months 1949, FHA received applications for mortgage insurance rental projects totalling 198,194 apartments as compared wi 63,597 units in the same period of 1948.

Home builders concentrated in greater degree on lower-pric houses and apartments for several reasons: (1) the higher-pri

lds were showing increasing
idences of saturation; (2)
ver costs made such a course
ore feasible; and (3) the
rket of modest-income fam-
es in urgent need of housing
s still largely untapped.

On July 15, 1949, President
uman signed the Housing Act
1949 marking the end of a
ter struggle between support-
; and opponents of public
using which had raged over a
ır-year period through the
th, 80th and 81st congresses,
d through one presidential
d two congressional election
mpaigns. The act greatly ex-
nded the program for govern-
ent financed and subsidized
using for low-income fami-
s, initiated a plan and author-
d substantial funds for fed-
l aid to communities in re-
ilding slum and other blight-
areas, provided federal loans
d grants for farm housing and
ınched a large-scale federal
ogram of housing research.

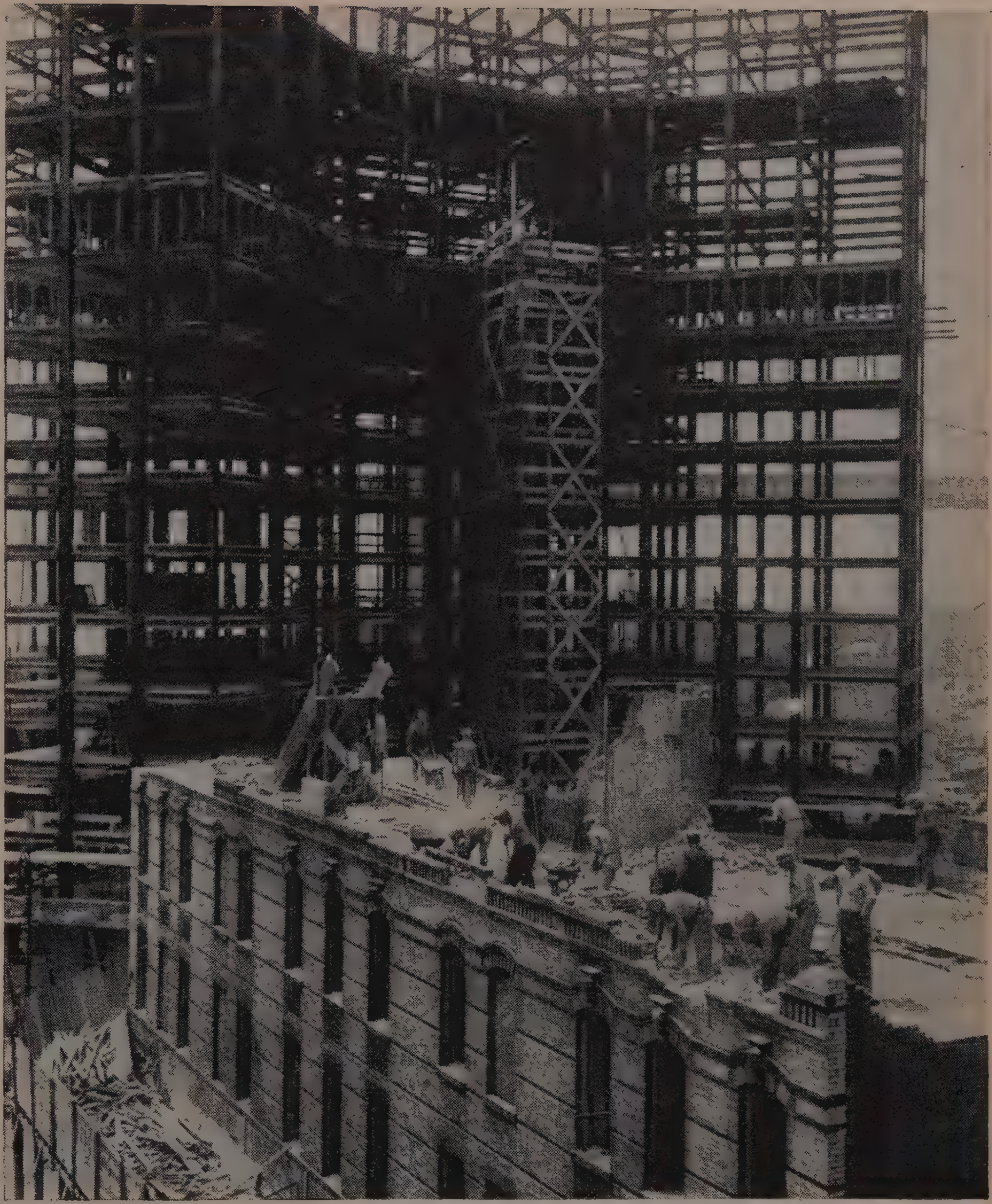
The main feature of the new
v was the public housing sec-
n which authorized the con-
uction of 810,000 dwelling
its for low-income families
er a six-year period and pro-
led grants of up to $308,000,-
o annually for 40 years to
ing rentals down within the
ancial reach of such families.
ith some modifications, the
v of 1949 extended the U.S.
ousing Act of 1937 under
iich 191,000 dwelling units
: low-income families had
en built. The 1949 act set a cost limit of $1,750 a room
: public housing constructed under its provisions which
ght be increased by not more than $750 in high construction
st areas.

By the year's end the Public Housing administration had ap-
oved preliminary loans to 227 cities to start planning a total
221,390 public housing units. Between 60,000 and 80,000
its were scheduled for construction in 1950 with full programs
135,000 to 150,000 to be built annually in the years from
51 through 1955.

Even before the new public housing program was enacted,
ention turned to the housing needs of families with incomes
ove the limits set for public housing but not sufficiently high
enable them to rent or buy housing in the open market. Union
our groups joined with housing, civic and welfare organiza-
ns to urge for such families a program of co-operative hous-
; aided by low-interest, long-term government loans. A bill
ıbodying this program was introduced in the 1949 session of
ngress but made little headway, and a stronger effort to obtain
actment was scheduled for 1950.

Activity of state and local governments indicated that the
stwar housing shortage had been only partially met in spite
of record-breaking new construction and that for modest- and low-income families the need for homes was still acute. A two-pronged program was enacted in Connecticut authorizing local authorities to initiate moderate rental housing, and the Connecticut state housing authority to assist with moderate-cost home construction. For local housing authorities the state provided temporary and definitive loans: under the state housing authority program, low interest rate loans were made available for home purchase. The state was also given authority to insure private first mortgages, purchase FHA insured mortgages, make second mortgage loans to veterans and to purchase modest-cost housing produced by private builders. Michigan launched a co-operative neighbourhood improvement program while Maine and Minnesota passed legislation to facilitate the construction of public housing.

New York state's public housing program was expanded substantially by the approval of three housing propositions in a state-wide referendum at the November elections. The proposals increased by $300,000,000 the amount the state might loan to localities for public housing construction, increased the total for which new commitments to pay annual subsidies might be



STEEL GIRDERS of the Alfred E. Smith Housing project rising in the shadow of New York city's Brooklyn bridge, as slum demolition (foreground) continued to make way for new housing units in 1949 made from $1,500,000 to $2,500,000 a year, and raised the maximum for outstanding total annual subsidy authorizations by $12,000,000 to an aggregate of $25,000,000.

New York city's first "white-collar" public housing project, Woodside Houses in Queens, received more than 30,000 applications for its 1,700 apartments. This type of public housing was built by the local housing authority but received no cash subsidy.

The first substantial step in moderating wartime rent controls was taken with the enactment by congress of the Housing and Rent Act of 1949. Controls were continued to June 30, 1950, but with two important modifications: (1) municipalities or entire states could be released from federal rent control by action of their governing bodies; and (2) landlords could be granted increases in rent where they showed that they were not receiving a fair operating return. From April 1, when the new law became effective, to Dec. 9, four states, Nebraska, Texas, Arizona and Utah, as well as a number of municipalities, were released from control by this procedure. The Federal Housing expediter released others on his own initiative so that just before the year's end a total of 2,587,000 family dwelling units had been decontrolled. In the case of two localities, this action resulted in such large rent increases that the communities requested re-establishment of controls. From April 1 to September 30, rent increases under the fair operating return formula had been granted affecting 352,037 dwelling units. The increases averaged 19%.

Late in the year it appeared that the Truman administration had determined to put the weight of the federal government's housing activities behind the fight for equal civil rights. Announcement was made that effective Feb. 15, 1950, FHA assistance to private home building would not be extended where building sites carried covenants restricting occupancy or sale on the basis of race, creed or colour. Washington let it be known also that public housing assistance would be affected by local policies on discrimination.

Some progress was made, particularly by large-scale builders, in achieving greater economy and efficiency in housing construction, but the industry and the government agencies concerned were still seeking ways to reduce costs. Research activities of the Housing and Home Finance agency stimulated the application of more economical roof construction methods by the use of trusses, a new and cheaper type of septic tank was developed and efforts were made to promote modular construction.

Modernization of building codes made some headway with more widespread adoption by municipalities of the model codes prepared by the Building Officials Conference of America and the regional conferences of building officials on the west coast and in the south. New York state took the first step toward the adoption of a state-wide code which would facilitate the use of new materials and methods of construction.

The promise of prefabrication was still some distance from realization. The Lustron steel house, into which the government had put $37,500,000 in Reconstruction Finance corporation loans, became a congressional storm-centre in midsummer and was in arrears on repayments at the year's end. Further RFC loans were cut off following the congressional inquiry.

Housing research received considerable impetus with the passage of the Housing Act of 1949 and the formation under its provisions of a Division of Housing Research as one of the major components of the Housing and Home Finance agency. An initial budget of $2,333,000 was allocated, somewhat less than half to be spent on research undertaken directly by the new division and the balance to finance studies assigned to existing university and industry research groups. The study program included research in cost data and analysis, housing
credit and finance, housing market analysis, construction prac
tices, residential design, engineering data, developing housin
statistics for which the 1950 census was to serve as a base an
developing model building codes. (*See* also ARCHITECTURE
BUILDING AND CONSTRUCTION INDUSTRY; BUSINESS REVIEW
MUNICIPAL GOVERNMENT; TOWN AND REGIONAL PLANNING.)

BIBLIOGRAPHY.—Department of Commerce, *Bureau of Labor Sta
tistics; Journal of Housing;* Publications of Housing and Home Financ
Agency and its divisions; *Architectural Forum.* (H. M. PR.)

Canada.—The number of houses completed in 1949 was esti
mated at 96,000, as compared with 85,000 in 1948 and 79,00
in 1947. Despite this brisk building program, little inroad wa
made into the nation's backlog of wanted homes—set at roughl
350,000 at 1949 prices.

To spur building, the federal government revised the Nationa
Housing act. For the first time in 15 years of bickering ove
housing responsibility, the federal government provided finan
cial assistance to the provinces in the rental field. Under th
revision, in general terms, the provinces became responsible fo
the acquisition of house-building land and for the requisite serv
ices, while the dominion became responsible for the design an
construction of the projects. The cost of development and an
profits or losses resulting from provincial management of th
projects were divided 75% to the dominion and 25% to the co
operating province. Since such dominion-provincial project
were exempt from municipal taxes, the federal government ar
ranged to pay each municipality involved a grant equal to nor
mal tax revenues. The 1949 revisions to the act also made i
easier for people with moderate incomes to purchase or buil
a home, by cutting in about half the previously required dow
payment.

The government-owned Central Mortgage and Housing cor
poration continued to be active throughout the year, and b
December had helped organize or had given assistance to com
munity planning organizations in nearly all Canadian cities ove
30,000 population and to half those between 5,000 and 30,00
population.

BIBLIOGRAPHY.—Dominion Bureau of Statistics, *Housing Bulletin N
19* (1949). (C. CY.)

Great Britain.—By the end of June, 684,045 new home
of which 526,897 were permanent and 157,146 were temporar
had been erected in the United Kingdom under the housin
program which began immediately after the general election
1945. Additional homes were also provided by the reconditio
ing of service camps, the conversion of larger houses into small
units and by other means so that by the end of Oct. 1949 mo
than 1,000,000 families in the United Kingdom had been move
from overcrowded houses into modern, well-equipped and com
paratively spacious new homes.

The actual work of construction gained momentum with t
years and whereas, in 1945, 3,014 houses were built, in 194
227,616 were built. In 1949 the building industry in the Unit
Kingdom was building 100 houses for every single house built
1945, and the monthly production figure now rose to somethi
like 25,000 houses a month. On June 30, 1949, 190,486 perm
nent houses were under construction, while bids for an add
tional 63,867 had been approved. Despite the stringency of t
economic position and the determination of the government
reduce expenditure wherever possible, no great cut in housi
expenditure was contemplated.

The government continued to give special priority to co
miners and to agricultural workers. In allocating houses
tenants, local authorities were under a statutory obligation
consider the housing needs of the families concerned; but th
now had the additional responsibility of considering also t
economic needs of the nation; and in accordance with this p
icy, by the end of June 1949, 30,528 mining families and 18,4
agricultural workers' families had been re-housed in hom

uilt by local authorities.

Housing costs remained very high and a house which would ave cost £400 before the war cost £1,500 or more. There was large inflationary element in this price, although during 1949 here was a downward tendency.

Commonwealth.—In the dominions, particularly in New ealand and Australia, the housing shortage remained acute, or was it likely to be solved until these dominions, who were ursuing a strong immigration policy, could attract a substantial orce of trained building labour from the United Kingdom. This n turn was held up by the acute shortage of shipping.

In the African colonies, housing needs were greatly accentuted by the rapid rise in native populations and by the many ew industrial enterprises which had been started after World Var II. The peanuts scheme in British East Africa gave rise to number of ambitious housing projects both for the European unicipal staff and for the African workers. In Nigeria a timber ompany acquired the land for what promised to be a model ousing estate for 2,000 workers. At Takoradi in the Gold Coast, here timber wharfs and a vast extension to the harbour were eing built, a model village of about 500 houses was being contructed on a site at Sekondi. (*See* also *Canada*, above.)

Europe.—In France, in the Normandy area where the fightng after D day was fiercest, vast reconstruction schemes were arried out; and, although the first emphasis was naturally on he essential social services, considerable headway was being ade in the provision of new homes.

In Germany, in towns such as Hamburg, considerable housing rojects had been and were being carried out. In Poland the olicy of reconstruction of war-devastated Warsaw was carried ut at almost incredible speed and a complete new city was far dvanced. In Switzerland the housing projects carried out by he cantons and the municipal authorities continued to be modls for the rest of the world. It was a standard practice in Swiss ousing schemes to provide a basement for each house, which as not used for living accommodation but which contained a ashing and laundry room equipped with washing machines and ther labour-saving devices, a store room for fruit and vegeables and a work room. Each Swiss housing project had as its entre a nursery school. (G. McA.)

Housing and Home Finance Agency: *see* Housing.

Human Nutrition and Home Economics, Bureau of: *ee* Agricultural Research Administration; Home Ecoomics.

Human Rights, Universal Declaration of: *see* Child Welfare; International Law; United Nations.

Hungary.

A people's republic of southeastern Europe, Hungary is bounded on the west by Austria, on the orth by Czechoslovakia, on the east by Rumania and on the outh by Yugoslavia. Area: 35,893 sq.mi. Pop.: (Oct. 1938 est.) ,021,000; (1948 est.) 9,165,000. Chief towns (1941 census): Budapest (cap., 1,164,963; [Dec. 31, 1948, est.] 1,058,288); zeged (136,752); Debrecen (125,933); Miskolc (109,433); Kecskemét (87,269); Pécs (78,512). Languages (1947 est.): Hungarian 92.9%; German 5.1%; Slovak 0.8%; Serbo-Croat nd Slovene 0.6%; Rumanian 0.2%. Religions (1947 est.): Roan Catholic 65.6%; Greek Catholic 2.5%; Calvinist 20.8%; utheran 6%; Greek Orthodox 0.4%; Jewish 4.3%. Chairman f the presidium of the people's republic 1949, Arpad Szakasits; rime minister, Istvan Dobi.

History.—A new five-year plan, to replace the three-year plan nding in 1949, was announced at the beginning of the year. Total investment over the five years 1950–54 was to be 35,000,000,000 forints, six times the amount invested in the three-year plan. Slightly less than half was to go to industry, and about one-third to agriculture and communications. Total industrial output in 1954 was to be 80% higher than in 1949 and 130% higher than in 1938. Output of iron and steel was to be nearly doubled during the five-year period, rising to 1,500,000 tons in the last year. Aluminum output, based on Hungary's rich bauxite deposits, was to be doubled, and there were to be great increases in electric power, building and chemicals. In agriculture the use of artificial fertilizers was to be trebled and it was hoped to increase crop yields by an average of 27%. Mechanization of agriculture was expected to release cattle used as draught animals and so to raise the milk output by a quarter.

Official figures during 1949 gave the expected percentage figures of production, showing that the three-year plan targets had been exceeded considerably ahead of time. It was, however, admitted that results in some branches of industry were not as good as the all-round figures.

Collectivization of agriculture was the avowed aim of policy, but was cautiously pursued. The five-year plan did not specify what proportion of agriculture should be collectivized by 1954. In August there were 550 collective farms in Hungary.

The year opened with the conflict between the government and the Roman Catholic Church, centred round the trial of Joseph Cardinal Mindszenty. The cardinal, arrested in Dec. 1948, was accused of treason, conspiracy with foreign enemies of the republic and offences against the currency laws. The specific charges in the published indictment for the most part amounted to talk hostile to the government, which in western countries would not be regarded as treason. Of the cardinal's obstinate hostility to the regime and determination not to trust the government's promises from the first days in 1945, there had never been any doubt: and events had to a large extent justified both the obstinacy and the distrust. The trial opened on Feb. 3. The cardinal confessed that he was "essentially" guilty of the offences with which he was charged, declared that he felt an agreement between church and government to be essential and hoped that his person would not stand in its way. He was sentenced to life imprisonment. At the parliamentary elections in May the hierarchy did not object to Catholics going to the polls. But the conflict remained as irreconcilable as before.

Elections were held on May 15; 95% of the electorate was declared to have voted. The official results showed that the total number of valid votes recorded was 5,730,519: of these 5,478,515 were for the People's Front list. No opposition candidatures were tolerated. After the elections of Nov. 4, 1945, there were 70 Communists in a national assembly of 409: after the elections of Aug. 31, 1947, their number increased to 97 in a house of 411: after May 15, 1949, they were 285 in a house of 395.

The new parliament adopted a new constitution, closely modelled on those of the "people's democracies" and the Soviet Union. On Aug. 23 the national assembly elected the presidium of the people's republic (21 members) of which Arpad Szakasits was the chairman.

A purge of the United Workers' party was carried out in the first months of 1949: 17% were removed from full membership but many of these were allowed to remain as candidates. The sensation of the purge was the unmasking of Laszlo Rajk, a prominent Communist and former minister of the interior, as a nationalist deviationist and agent of western imperialists. With him were arrested a leading left-wing Social Democrat intellectual, Pal Justus; the former head of the Communist party's cadres section, Tibor Szonyi; the former chief of the political section of the general staff, Lieut. Gen. Gyorgy Palffy; and the former counsellor of the Yugoslav embassy in Budapest, Lazar

NEWS REPORTERS at the trial of Joseph Cardinal Mindszenty, examining a document allegedly written by Mindszenty to the U.S. minister at Budapest asking his help in escaping Hungary. Mindszenty was found guilty of treason and sentenced to life imprisonment on Feb. 8, 1949

Brankov. The trial, which opened on Sept. 16, was above all an indictment of the Tito regime in Yugoslavia. Brankov gave evidence that even during the war Tito was working for the British secret service against the Soviet Union. Rajk confessed to all the accusations, including that of having worked for the political police of the prewar Horthy dictatorship and of having gone to fight in Spain for the republic merely in order to undermine the antifascist movement and help the axis. The incredibility of the charges, contradictions between the alleged facts and willingness of the victims to confess on all points made the Rajk trial much more similar to the Moscow trials of 1936–37 than any of the other conspiracy trials that had so far been staged in eastern Europe.

On Sept. 24, Rajk, Szonyi and Andras Szalai, deputy to Szonyi, were sentenced to death, and on Oct. 15 they were hanged. Five others were given prison sentences. (H. S-W.)

Education.—Schools (1949): elementary, 1,432; general, 4,770; pupils, 1,220,000; secondary, 388; pupils, 83,000; universities, 8; institutions of higher education, 8; students, 28,000. Illiteracy (1941): 6.0%.

Finance and Banking.—Budget (1949 est.): revenue 11,587,000,000 forints, expenditure 11,553,000,000 forints. Currency circulation: (Sept. 1949) 3,307,000,000 forints; (Sept. 1948): 2,628,000,000 forints. Gold reserve: (Aug. 1949) U.S. $37,000,000; (Aug. 1948) U.S. $34,000,000. Savings and bank deposits: (Sept. 1949) 5,336,000,000 forints; (Sept. 1948) 2,180,000,000 forints. Monetary unit: forint with an official exchange rate of F.1=8.45 U.S. cents (Nov. 1949).

Foreign Trade.—(1948) Imports, 1,975,000,000 forints; exports, 2,965,000,000 forints.

Transport and Communications.—Roads (1949): 10,248 mi. Licensed motor vehicles (Dec. 1948): cars, 15,282; commercial vehicles, 12,317. Railways (1948): 5,173 mi.; passenger-miles, 2,987,000,000; freight net ton-miles 2,037,000,000. Danube shipping (Dec. 1947): merchant vessels, 514: total tonnage, 118,717. Telephones (1948): subscribers, 106,768. Radio receiving set licences (Dec. 1948): 475,000.

Agriculture.—Main crops (metric tons, 1948): wheat 1,579,000; maize 3,201,000; barley 696,000; rye 780,000; oats 332,000; sugar, raw, value, 153,000; rice 39,000; potatoes 2,699,000; tobacco 23,000; linseed 6,000. Livestock (May 1948): pigs 2,499,000; cattle and buffaloes 1,804,000; sheep 591,000; horses (Feb. 1949) 569,000.

Industry.—Fuel and power: coal and lignite (1948) 10,613,000 metric tons; natural gas (1947) 3,560,000,000 cu.ft.; crude oil (1947) 570,000 metric tons. Raw materials (metric tons 1947): iron ore, metal content, 244,000; pig iron 304,000; steel ingots and castings 596,000; bauxite 340,000; manganese ore 50,000. Manufactured goods (1947): cotton piece goods 126,000,000 m.; (in metric tons) cotton yarn 21,000; wool yarn 6,000; cement 199,000.

Hunting: *see* WILDLIFE CONSERVATION.

Hurdling: *see* TRACK AND FIELD SPORTS.

Hutchins, Robert Maynard

(1899–), U.S. educator, was born on Jan. 1 in Brooklyn, N.Y. He left Oberlin college, Oberlin, O., in 191 to enlist in the U.S. ambulance corps. Entering Yale university New Haven, Conn., in 1919, he received his A.B. in 1921 an his LL.B. (*magna cum laude*) in 1925. In 1923 he was appointe secretary of Yale university and in 1927 dean of its law school In 1929, at the age of 30, he became the fifth president (and in 1945, the first chancellor) of the University of Chicago.

The year 1949 marked the 20th anniversary of his becomin the university's chief executive. During these years the university accomplished many significant changes in educational policy (see *Encyclopædia Britannica*), and greatly enlarged it resources.

University affairs continued during the year to occupy mos of Hutchins' attention. He took an active part in presenting th answer to charges in the Illinois legislature that the universit was permitting Communist "indoctrination," both as the chie witness in the public hearings April 21 and in several speeche Throughout he reiterated the university's determination to maintain academic freedom and attacked the doctrine of "guilt b association"—the membership of faculty members in organizations which at some later period were termed "fronts"—relie upon as the evidence of indoctrination. During the year, Hutchins made a total of 41 formal speeches. His consistent theme were the purpose of education, the necessity of world gover ment, and moral values.

As chairman of the Goethe Bicentennial Convocation ar Music festival, held at Aspen, Colo., June 27–July 16, Hutchin had a leading part in the organization and direction of t observance, which he had initiated, and he gave the final addres (W. V. M.)

ICC: *see* INTERSTATE COMMERCE COMMISSION.
Ice Cream: *see* DAIRY PRODUCTS.

Ice Hockey.

The Toronto, Canada, Maple Leafs became 1949 the first team in history to capture t Stanley cup play-offs three straight seasons when it routed t l Wings of Detroit, Mich. Having placed only fourth in the ular National Hockey league race, Toronto furnished a major et by routing the circuit's title winners in four games.

lthough Detroit had won the regular league race by a good rgin, it was hard pressed in the semifinals for the Stanley , and in the final series, Toronto stopped the Wings in four ight games, 3–2, 3–1, 3–1 and 3–1.

oronto reached the last round by halting Boston's Bruins, r games to one. The Leafs triumphed 3–0, 3–2, 3–1 and 3–2, ston taking only the third contest, which was decided at 5–4 overtime.

Montreal's Canadiens carried Detroit to seven games in their nifinals. Detroit got away winging by capturing the first tle, 2–1, in three overtime sessions, but lost the second, 4–3, extra play and the third, 3–2. Detroit came back strongly h victories by 3–1 scores in the fourth and fifth contests, the Canadiens annexed the sixth battle, 3–1, and tossed the y-offs into a 3–3 deadlock. Detroit, however, got off to a fast rt in the deciding meeting on its home ice to win, 3–1, for right to face Toronto in the cup finals.

Chicago's Black Hawks could place no higher than fifth in regular six-team National league race, but furnished the leading scorers of the circuit. The veteran Roy Conacher assed 68 points to capture the crown, with his teammate ug Bentley a close second, only two points behind.

The Calder Memorial trophy, awarded to the league's out- nding rookie, was won by Pentti Lund, Finnish-born star of New York Rangers. Bill Quackenbush of Detroit received Lady Byng trophy given annually to the man who shows best sportsmanship and gentlemanly conduct combined with ying ability. Bill Durnan of Montreal achieved the unprece- nted feat of capturing the Vezina trophy for the fifth time in seasons, the prize being posted for the goalie with the best ensive mark.

The Providence (R.I.) Reds emerged triumphant in the American Hockey league play-offs for the Calder cup, setting back the Hershey (Pa.) Bears. The Spokane (Wash.) Flyers routed the Windsor (Ont.) Spitfires for U.S. senior laurels.

Y-OFF GAME in the National Hockey league semifinals, played at Boston, s., between the Toronto Maple Leafs and the Boston Bruins, March 30, 9. The Maple Leafs defeated the Bruins and went on to win the Stanley in four straight games against the Detroit Red Wings

Boston college, Chestnut Hill, Mass., enjoyed an outstanding season, climaxed when it toppled Dartmouth college, Hanover, N.H., 4–3, in the final game of the National Collegiate Athletic association championship played at Colorado Springs, Colo. The Boston college Eagles compiled a record of 21 victories in 22 starts, the lone setback coming at the hands of Dartmouth earlier in the campaign.

Dartmouth halted Harvard university, 7–2, in a play-off of a first-place deadlock in the Pentagonal league, then bowed to the University of Montreal, Canada, 4–3, in a battle for the Alexis Thompson trophy. (T. V. H.)

Iceland.

An island republic of the North Atlantic, Iceland has an area of 39,768 sq.mi., and a population (census 1940) of 121,474, (est. 1949) 138,502. Capital: Reykjavik, the only large town (pop. 1945: 46,578; est. 1949: 53,384). Religion: Lutheran Christian. President 1949: Sveinn Björnsson; prime ministers: Stefan Johann Stefansson; from Dec. 6, Olafur Thors.

History.—Iceland's problems of 1949 were much concerned with its relations to the outside world. Accession to the Atlantic defense pact was bitterly opposed by a strong Communist minority. On March 30 the *althing* voted to join, 37–13. Two Agrarians (Progressives) abstained, while one of that group joined with two Social Democrats and the solid bloc of ten Communists in opposition. Feeling was intense, and on the night of the voting a Communist mob threw stones in the windows of the parliament. The chief complaint was against the use of Iceland as a military base for great-power conflict. The foreign minister, Bjarni Benediktsson, became satisfied during a visit to Washington in March, that the United States would not demand peacetime military bases on the island. In case of actual war, of course, there was no doubt that this strategic mid-ocean position would again become involved. At Keflavik airport, just outside Reykjavik, the U.S. government was completing construction of a $2,000,000 hotel and office terminal building. The contract for civilian use of the airfield under U.S. operation was to continue to 1952.

Iceland continued to co-operate in the European Recovery program and in August went a step further by accepting membership in the Council of Europe.

Diplomatic alignment was but one of the internally divisive questions. The government's anti-inflationary measures roused antagonism, and the difficulties were accentuated by the currency devaluation in September. Communist control within the labour unions had been overthrown in the fall of 1948, and no Communists were left in the cabinet. But the deep line of division in internal affairs as in foreign affairs lay between the Communists and the bourgeois parties. On Oct. 23 the general election indicated the relative strengths:

	Popular vote	*Althing* representation	Change from 1947 election
Independent party (Conservative)	28,546	19	0
Agrarian party (Progressive)	17,659	17	+3
Communist party	14,077	9	−1
Social Democrat party	11,938	7	−2

The decline of the two workers' parties was significant, but left each with a large popular following and an important parliamentary representation. The losses of the left groups were significant enough that a few weeks later a new government was formed, with a cabinet of five members, all from the Independence party, largest single group. With Olafur Thors as prime minister, they took office on Dec. 6.

Sveinn Björnsson, when his first full four-year term expired on June 17, was re-elected by acclamation to serve another four years as president. He remained a nonparty man.

Finance.—The króna, fixed during the postwar years at an exchange rate of 15.4 United States cents, followed the British pound in a 30.5% devaluation on Sept. 21, 1949; the exchange rate became then 26.22 kr. to the pound sterling, 9.365 to the dollar; in other words, the króna was revalued at 10.7054 United States cents.

Iceland received $8,300,000 in aid from the European Recovery program during the 15-mo. period from April 1948 to June 1949, and was scheduled to receive $7,000,000 during the fiscal year 1949–50.

Trade and Communication.—In 1948 Iceland's exports totalled $63,000,000 in value, and its imports $62,000,000. Of the exports, $18,000,000 worth went to the U.K., $4,000,000 to the U.S. Germany took about $10,000,000, but the share of the U.S.S.R. dropped from $8,000,000 in 1947 to about $1,000,000 in 1948. Of the imports, $20,000,000 were from the U.K. and $13,000,000 from the U.S., with the sources for the remainder widely scattered. The major import and export commodities are shown in the table.

Major Import Commodities of Iceland, 1948

Commodity	Value in kr.	Amount in metric tons
Cereals	23,893,000	23,648
Feeds	5,878,000	7,753
Lumber	21,939,000	23,165
Textiles and clothing material	32,541,000	2,731
Coal	20,619,000	122,033
Petroleum products	32,384,000	127,944
Salt	3,453,000	20,956
Cement	11,662,000	58,427
Iron and steel	17,974,000	12,549
Machinery	57,912,000	5,893
Ships	65,607,000	22,354
Other conveyances	15,996,000	1,442

Major Export Commodities of Iceland, 1948

Commodity	Value in kr.	Amount in metric tons
Salted fish	30,810,000	16,191
Fish on ice	90,347,000	12,490
Frozen fish	64,009,000	22,464
Canned fish	4,206,000	959
Salted herring	22,794,000	109,825 (bbl.)
Cod liver oil	33,666,000	8,036
Herring oil	74,313,000	28,335
Fish meal and herring meal	40,671,000	39,185
Sheepskins	16,130,000	747,325 (pieces)

Iceland had in 1948 a merchant marine of 30 vessels; total tonnage 32,200. With the fishing fleet included the total tonnage of vessels was 81,468 at the end of 1948. New trawlers were being added for fishing, and the Icelandic government sought in England a loan of $5,000,000 to pay for them. Total fish production in 1948 was 450,000 tons.

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Ice Skating. Richard Button of Englewood, N.J., men's Olympic and world figure-skating title holder, successfully defended his world crown at Paris, France, and won the North American championships at Ardmore, Pa., and the United States meet at Colorado Springs, Colo. Yvonne Sherman of New York city capped several years of effort by winning the senior women's division of both the North American and national title tests. The 18-year-old star also was runner-up to Alena Vrzanova of Czechoslovakia for the world crown left vacant when Barbara Ann Scott of Canada turned professional.

In defeating Marlene Smith of the Toronto Skating club, who placed second, Yvonne Sherman became the first United States representative to win the women's North American championship since 1939.

A list of United States title winners follows: Button, senior men; Sherman, senior women; Karol Kennedy and Peter Kennedy of Seattle, Wash., senior pairs; Lois Waring of Baltimore, Md., and W. H. Bainbridge of Washington, D.C., gold dance team; Vera Elliott and Rex Cook of New York city, silver dance team; Sonya Klopfer of New York city, junior women; Richard Dwyer of Los Angeles, Calif., junior men; Tenley Albright of Boston, novice women; and Hugh C. Graham of Tulsa, Okla., novice men.

North American champions were Button, senior men; Sherman, senior women; Karol Kennedy and Peter Kennedy, pairs; Janet Gerhauser, Marilyn Thomsen, Marlyn Thomsen and John Nightingale of the St. Paul Figure Skating club, senior fours; and Lois Waring and W. H. Bainbridge, senior dance team.

Three titles fell the way of Ray Blum, veteran competi from Nutley, N.J., in senior men's speed skating, while honou among the women speedsters were more or less distributed.

A list of major title winners follows: eastern states, outdoo —Blum, men; Mary Lynch of Newburgh, N.Y., women eastern states, indoors—Bobby Jahn of Bogota, N.J., men Lynch, women; middle Atlantic states—Blum, men; My Shapiro of Brooklyn, N.Y., women; national—Blum, men Lorraine Sabbe of Detroit, Mich., women.

FILMS OF 1949.—*An Introduction to the Art of Figure Skating* (N tional Film Board of Canada); *Skating Fantasies* (Hawley-Lord). (T. V. H.)

Idaho. One of the far northwestern states of the U.S., b longing to the group regionally designated as t Pacific northwest and part of the original Oregon territor Idaho is the 12th largest state, with an area of 83,557 sq.m It was admitted as a territory by Pres. Abraham Lincoln 1863 and became a state on July 3, 1890. Idaho is popular known as the "Gem state." Pop. (1940) 524,873, of whi 66.3% was rural, 33.7% urban; the July 1, 1949, estimate the U.S. census bureau set Idaho population at 592,000. Th estimated population in leading cities for 1949 was Boise (cap tal), 55,000; Pocatello, 25,000; Idaho Falls, 22,000; Namp 18,000; Twin Falls, 18,000; Coeur d'Alene, 15,000; Lewisto 13,333; Caldwell, 13,500. There were 3,537 Indians in the sta in 1940. It was expected that a decided increase in populati would be shown in the Arco (southeastern) area with the esta lishment of the atomic reactor plant by the Atomic Energ commission. Work was under way on the project in late 194

History.—On Jan. 2, 1950, state elective and appointive of cials began the final year of the first four-year term in Idaho history. All, elected in 1946 and admitted to office on Jan. 1947, were Republicans. The governor was C. A. Robin Other officials were lieutenant-governor, Donald S. Whitehea secretary of state, J. D. Price; attorney general, R. E. Smy (appointed to fill term of Robert Ailshie, deceased); audit N. P. Nielson; treasurer, Lela D. Painter; superintendent public instruction, Alton Jones; inspector of mines, Geor McDowell. In Oct. 1949, Gov. Robins appointed former U Senator Henry C. Dworshak to his former congressional po replacing Bert H. Miller (Democrat), deceased, who had d feated Dworshak for the office in Nov. 1948. Miller's electi had necessitated his resignation from the Idaho supreme co bench. C. J. Taylor was appointed to the supreme court su ceeding Miller, and William Keeton was also appointed to t bench to succeed Paul Hyatt, resigned.

As a result of a law enacted during the 1949 session of t state legislature, a bipartisan committee of eight members o "Little Hoover" commission was appointed by the speaker the house and the president of the senate, who were to be officio members, to study governmental reorganization in t state. This commission was to report at a special session of t legislature called in Feb. 1950 by the governor.

Education.—During the operation of Idaho's school district reorgani tion program, which was adopted by the 1947 legislature, 681 school tricts had been eliminated by 1949. Twenty-four of the 44 counties in state had school programs completely reorganized. Of these 24 count 11 were reorganized into county-wide units; *i.e.*, one school district in entire county. Total school population in elementary schools, high scho colleges and universities, in both public and parochial systems, and 2 state institutions for industrial training and for the deaf and bl totalled 134,717 in 1949, in comparison with 132,707 in 1948. A s stantial increase was shown in enrolments, with 90,244 in element schools which had 3,287 teachers. The Idaho Industrial Training sch had an enrolment of 123, and the State School for the Deaf and Blind, The 6 colleges, 1 university and 2 junior colleges had a combined en ment of 9,308.

Social Insurance and Assistance, Public Welfare and Related Programs Idaho has two institutions for the mentally ill—one at Orofino and one Blackfoot; a home for the feeble-minded at Nampa; a school for the d and blind at Gooding; a state industrial school at St. Anthony; a tub losis hospital at Gooding. The prison, located at Boise, had an average 294 inmates during the year 1949, with a capacity of 400. The prison d operated since 1947 under a new penal system, with a rehabilitation ogram and board of correction, rather than as formerly with the governor olding the power of probation and parole.

Communications.—During the period from Jan. 1, 1949, to Oct. 1, 1949, e Idaho highway department expended $2,619,705.38 for maintaining ghways and $6,867,528.66 for construction of highways. It was estiated that during the calendar year 1949 the department would expend o,500,000 for construction and $3,500,000 for maintenance. The 1948 ssion of the legislature appropriated $50,000 for a study of Idaho's highay needs, and a report of the survey and recommendations was to be ade at the special session in Feb. 1950.

Agriculture.—The main sources of income in southern Idaho are potatoes, gar beets, beans, fruit, hay, dairying, sheep and cattle raising.

Table I.—*Leading Agricultural Products of Idaho*

Crop	1949 (est.)	1948	Average 1938–47
heat, bu. (all)	33,325,000	34,583,000	29,316,000
rn, bu.	1,440,000	1,260,000	1,698,000
ats, bu.	6,669,000	6,300,000	7,326,000
rley, bu.	9,570,000	12,276,000	10,448,000
gar beets, short tons	1,008,000	1,233,000	1,026,000
y beans, cwt.	2,503,000	2,570,000	1,997,000
hay, tons	2,376,000	2,353,000	2,402,000
tatoes, bu.	31,500,000	42,630,000	35,048,000
nions, 50 lb. sacks	1,610,000	1,688,000	....
pples, bu.	1,743,000	1,450,000	2,092,000

Manufacturing.—Idaho is not a highly developed industrial state. In 1941 ss than 10,000 employers paid workmen's compensation taxes for slightly ss than 78,000 employees, on an annual pay roll of $85,600,000. In the st quarter of 1948, 12,893 employers had 89,861 employees and an nual pay roll of $233,525,364.

Mineral Production.—Strikes in the Coeur d'Alene mining district held up roduction for several months in the summer and fall of 1949. Figures for 948 production were made available in Oct. 1949.

Table II.—*Mineral Production in Idaho, 1948*

Metal	Production	Value
timony, lb.	12,678,776	$ 2,851,540
dmium, lb.	591,375	1,082,714
pper, lb.	3,000,000	657,000
old, troy oz.	60,000	2,121,000
ad, lb.	177,000,000	30,975,000
ercury, flasks	900	72,900
osphate rock, tons	565,000	4,500,000
lver, troy oz.	11,550,000	10,452,000
ngsten, units of WO_3	(none)	(none)
nc, lb.	172,000,000	22,876,000
Total		$75,588,154
ement, concrete, pipes, blocks, sand, gravel, lime, etc.		4,000,000
		$79,588,154

(C. A. Rs.)

llinois. A north central state of the United States, admitted to the union in 1818, nicknamed the "Sucker state," ometimes called the "Prairie state." Total area: 56,400 sq.mi., f which 55,947 sq.mi. are land. Pop. (1940): 7,897,241, includg 3,957,149 males and 3,940,092 females; 7,504,202 white, 93,039 nonwhite.

Population classed as urban in 1940 was 5,809,650, rural not n farms 1,119,488, rural farm 968,103.

As of July 1, 1949, the U.S. census bureau estimated the opulation at 8,489,000, showing a gain of 7% since 1940. hicago (3,632,532, 1949 census est.) is the largest Illinois ity followed by Peoria (120,000, est.); Rockford (105,000, st.); East St. Louis (85,000, est.).

History.—Because of Republican control of the state senate nd demands of pressure blocs for increased appropriations, ov. Adlai E. Stevenson's Democratic administration gained ew of its objectives in the 1949 legislative session. The proosal to call a convention to revise the state's 1870 constituon was defeated although a proposition to make the document ore amendable was to be submitted to the voters for verdict 1950. A total of 971 new laws were enacted but all proposals or tax increases were defeated.

Education.—Illinois public grade and high schools enrolled approxiately 1,250,000 pupils for the fall term in 1949 although many schools ere closed because of a polio epidemic. A total of 7,005 school districts ad been abolished since the end of World War II as the result of conolidations. The legislature increased state aid to local schools by 53%, oting $100,319,000 for the two years beginning July 1, 1949.

The state superintendent of public instruction in 1949 was Vernon L. ickell.

Social Insurance and Assistance, Public Welfare and Related Programs.—The legislature appropriated $265,465,000 for old-age pensions, aid to dependent children, blind assistance and general relief for the 1949–51 biennium. As of Oct. 1949 the Illinois public aid commission reported 4,561 blind receiving an average monthly grant of $48.43. There were 129,308 receiving an average monthly old-age pension of $47.12; 91,554 dependent children receiving an average of $27.51 and 95,257 persons receiving general assistance averaging $28.62 monthly. To avoid a deficit the commission ordered a cut of 5% in aid to dependent children and 10% in general assistance effective Sept. 1.

Investigation by the commission resulted in 2,652 relief cases being dropped at the end of the year and payments reduced in 7,563 cases. Increases were granted in 5,739 cases. One in five recipients was found to be ineligible or overpaid in four months of investigation.

At the end of the year the total number of claimants for unemployment benefits was 151,187 of whom 87,116 were in the Chicago area.

Between April 1 and December 17 compensation payments had been cut off from 76,316 jobless who had collected all their compensation but had not been re-employed.

Communications.—The state highway commission spent $37,425,000 during 1949. The state road system got 688 mi. of new and improved roads, 38 bridges and 12 grade separations. At the end of the year State Director of Public Works Charles P. Casey announced postponement of work on 1,128 mi. of highway because of insufficient funds. Expenditures totalling $70,500,000 were halted, including purchases of rights of way for superhighways in the Chicago area. Federal aid of $40,899,718 was unavailable for lack of money to comply with the requirement that the state match such funds dollar for dollar. The legislature refused to vote a two-cent additional gasoline tax to relieve this stringency.

The Illinois highway system consisted of 125,000 mi. of all types of roads. There were 11,711 mi. of railroad serving about 80% of the communities of the state.

Banking and Finance.—Active commercial banks, stock savings banks and nondeposit trust companies in Illinois numbered 887 with total deposits of $11,814,485,000. Of the total banks 870 with deposits of $11,774,756,000 were covered by the deposit insurance of the Federal Deposit Insurance corporation.

The budget voted by the legislature to carry the state government until June 30, 1951, was $1,252,990,013, highest in the state's history. The legislature also voted $7,477,494 in nonbudgeted items and $65,120,585 in deficiency and emergency appropriations to complete the preceding biennium.

State tax collections increased in 1949. In the first 11 months the 2% sales tax produced $154,357,000, a gain of $2,208,000 over the same period of 1948. Motor-fuel taxes were up $3,009,000 and motor vehicle licences gained by $6,029,000. The cigarette tax dropped $206,000 in the same period.

At the end of November the state's general revenue fund had a balance of $166,335,000. The total bonded debt of the state as of Aug. 31 was $448,021,100 compared with $469,158,500 a year before.

A total of $515,262,630 in trust funds was held in the state treasury Aug. 31 earmarked for unpaid soldiers' bonuses, social welfare obligations, uncompleted contracts, etc.

Agriculture.—Production of the principal crops in Illinois during 1949 and 1948 and the average production during 1938–47 are shown in Table I.

Table I.—*Leading Agricultural Products of Illinois*

Crop	1949	1948	1938–47 Average
Corn, bu.	518,112,000	564,372,000	398,442,000
Soybeans, bu.	82,602,000	80,496,000	59,831,000
Oats, bu.	168,990,000	181,091,000	130,320,000
Wheat, bu.	49,379,000	41,049,000	28,160,000

Manufacturing.—The value added by manufacture to products in Illinois in 1947 was $6,680,137,000, and the number of employees 1,184,820 of whom 954,415 were production workers. Total salaries and wages were $3,585,093,000, wages $2,627,318,000, number of establishments 15,988.

Principal industries and values added by manufacture were meat packing $187,695,000; blast furnaces and steel mills $205,187,000; petroleum refining $101,871,000; tractors $168,844,000.

Table II.—*Production of Coal and Petroleum in Illinois*

	1948	1949 est.
Bituminous coal, net tons	66,500,000	44,090,000
Petroleum, bbl.	64,178,600	42,500,000*

*First eight months.

Mineral Production.—Coal production in Illinois was reduced by 103 days of no work because of strikes, vacations and the three-day work week decreed by the miners' union.

Although much new oil was found by widespread drilling in 1949, the over-all decline of the state's output since the peak of 147,500,000 bbl. in 1940 continued. (L. H. L.)

Illiteracy. In underdeveloped areas of the world 78% of the population was illiterate in 1949; in transitional areas 20%; and in developed areas 5%. Denmark, Germany, the Netherlands, Norway, Sweden, Switzerland and Great Britain reported that 99.5% of their populations were literate. The United States reported 97.3% literate, with 10% or more of the population still functionally illiterate. Efforts to gain public

DR. FRANK LAUBACH, of the Committee on World Literacy, teaching a group of Nigerians to read their native language, Hausa. By 1949, Dr. Laubach had aided more than 60 governments and missions to conduct literacy campaigns in some 175 languages and dialects. Each adult taught was asked to promise to teach another illiterate

support of literacy education for adults were continuing in the United States, and there was continued emphasis on literacy education among the Indians.

France reported a literacy rate of 93% in 1949; Belgium 92%; Ireland 88%; Hungary 85%; Italy 73%; Spain 54%; Portugal 46%. However, in Italy, illiteracy varied greatly from one end of the peninsula to the other. In southern Italy the great majority both of school-age children and of adults were illiterate because of the poor economic and social conditions in that region. A large scale literacy drive was in progress during the year.

In the middle east, Lebanon reported that it had enrolled in elementary school 72.7% of its population as compared with 51.6% in Palestine (Arab); 47.4% in Egypt; 39.4% in Syria; 28% in Jordan; and 20% in Iran.

Salient among the literacy education programs in India was the Bombay experiment, where the problem was multilingual. Work on the ten-year plan initiated in 1946 was gathering momentum. The plan aimed at making all illiterate adults (over 1,000,000) in the city literate within ten years at a cost of approximately $1,500,000. The work was organized in a systematic and practical manner.

A United Nations Educational, Scientific and Cultural organization seminar on the education of adults in rural zones of Asia was held at Mysore, India, in Nov. and Dec. 1949 as part of the literacy campaign.

The U.N.E.S.C.O. project in China launched an undertaking for the preparation of model audio-visual mass education media to the end of permitting the transmission of ideas and fundamental knowledge without the aid of the written word.

An inter-American seminar was held during July and August at Rio de Janeiro, Brazil, for the purpose of studying the literacy situation in the Americas, and of providing leadership training for the literacy campaigns in this area.

In the Caribbean area, Jamaica reported that there was need for alternative and cheaper forms of schools in combating illiteracy.

In Haiti the U.N.E.S.C.O. project in fundamental education showed progress in the production of teaching materials for use with illiterate and newly-literate adults. The Haitian department of labour had assumed some responsibility in teaching workers to read.

In Africa, the Christian mission groups continued to repo remarkable gains in the campaigns against illiteracy. Norther Rhodesia produced a film telling the story of the literacy education work there. The Gaskiya corporation, Zaria, Norther Provinces, Nig., published booklets for children and adults wh were learning to read and was stimulating action for the continued production of such materials and of newspapers. I Algeria, the department of adult education issued a monthl bulletin which gave news of the development of literacy classe as well as practical suggestions for the use of the primer an for lessons in literacy.

In southeast Asia, Frank Laubach conducted his famous wor in literacy education in Thailand and the neighbouring area

Reports from the Republic of the Philippines indicated tha the government was increasingly active in literacy educatio Emphasis was on the "each-one-teach-one" method, with hig school teachers and pupils setting the example.

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(E. W. Gn.)

I.L.O.: *see* International Labour Organization.

Immigration and Emigration.

There were about 88 000,000 admissions persons into the United States during the year ended June 3 1949.

Almost 97% of these persons, however, were citizen an alien border crossers, many of whom made frequent crossings.

Arrivals and departures during 1948 and 1949, exclusive border crossers, crewmen and agricultural labourers, were as r ported in Table I.

Table I.—*Arrivals and Departures of Aliens and Citizens*

	1949	1948
Arrivals:		
Aliens admitted	635,589	646,5
Immigrant	188,317	170,5
Nonimmigrant	447,272	476,0
U.S. citizens	620,371	542,9
Aliens debarred	3,834	4,9
Departures:		
Aliens departed	430,089	448,2
Emigrant	24,586	20,8
Nonemigrant	405,503	427,3
U.S. citizens	552,361	478,9

Immigrant aliens, those admitted for permanent residence, umbered 188,317. This was the largest number to be admitted any year since 1930.

Quota immigrants are those admitted under established quo- s from the countries of Europe, Africa and the Pacific, and e colonies and dependencies of those countries. The total au- orized quota for all countries of 153,929 was 73.4% filled as 3,046 quota immigrants were admitted to the United States. ncluded in the number of quota immigrants admitted were 39,- 34 displaced persons, who were admitted under the Displaced ersons act of 1948.

The principal countries from which immigrants came and e classes of admission were as reported in Table II.

Table II.—*Immigrant Aliens Admitted to the United States by Classes and Principal Countries of Birth*

untry or region of birth	Number admitted	Quota	Husbands, wives and children of U.S. citizens	Natives of non-quota countries, their wives and children	Ministers, professors, their wives and children	Other classes
countries	188,317	113,046	35,854	36,394	2,102	921
rope	138,301	107,722	28,149	374	1,641	415
Germany	23,844	12,632	11,100	11	81	20
Great Britain	19,050	17,816	970	163	97	4
Italy	11,157	5,182	5,720	71	109	75
Poland	23,744	21,487	1,898	16	299	44
Other Europe	60,506	50,605	8,461	113	1,055	272
ia	5,287	1,563	3,462	18	239	5
nada (includes Newfoundland)	21,515	1	1,404	19,901	98	111
est Indies	6,518	2,441	444	3,592	35	6
exico	7,977	1	440	7,507	10	19
ntral America	2,493	58	138	2,290	4	3
uth America	2,639	170	129	2,327	10	3
rica	737	534	174	8	20	1
stralia & New Zealand	602	214	349	4	34	1
ilippines	1,068	53	1,009	1	—	5
her countries	1,180	289	156	372	11	352

Aliens admitted for a temporary stay and resident aliens re- rning from abroad numbered 447,272, compared with 476,006 mporary admissions in the previous fiscal year.

There were 430,089 aliens who departed from the United ates. Of these 24,586 were emigrants, or aliens who left a ermanent residence in the United States for residence else- here; 22,354 resident aliens and 6 treaty traders planned to turn to the United States after a temporary sojourn abroad, d 383,143 aliens admitted for temporary periods departed for sidence abroad. (*See* also ALIENS; CENSUS DATA, U.S.; REF- GEES.) (W. B. MI.)

Other Countries.—During the period Jan. 1946–Jan. 1949 pproximately 278,000 British emigrated to Canada, Australia, ew Zealand, South Africa and Southern Rhodesia, while more an 4,000 aliens also left the country. About 140,000 British ere registered as desiring to emigrate.

Australia, with an immigration figure which aimed at bring- g the population up to 20,000,000, agreed to accept 12,500 splaced persons yearly, offering them the possibility of attain- g Australian citizenship after five years' residence. The figure t for migration from Great Britain to Australia for the year 49 was 70,000.

Canada expected a total immigration of 100,000 to include ,000 from Great Britain. The government accepted 500 Es- nians from Sweden and, in order to balance the French-Ca- dian population, made especial, but not very successful, efforts secure immigrants from France.

On June 9, 1948, the Israeli foreign minister announced that e new government did not envisage "any measure preventing delaying the entry of Jewish immigrants to Israel irrespec- ve of age or sex." The number of immigrants in that same onth was 1,133. In July 1948 it was 12,687. For the remaining onths of 1948 the average monthly figure was 15,507. For the n months, Jan.–Oct. 1949, the total number of admissions was 1,390. (B. L. B.)

Imports: *see* INTERNATIONAL TRADE; TARIFFS. *See* also under various countries.

Income, Distribution of: *see* WEALTH AND INCOME, DISTRIBUTION OF.

Income and Product, U.S.

According to preliminary estimates, the U.S. national income amounted to $222,000,000,000 in 1949 and the gross national product for the year totalled $259,000,000,000. Both of these comprehensive measures of the nation's economic activity were less than 2% below the all-time highs established in 1948.

Also indicative of the economy's well being in 1949 was the virtual maintenance of personal income at the 1948 level. Preliminary data indicated that personal incomes aggregated $210,000,000,000 in 1949, only slightly below the record total of $212,000,000,000 in the previous year.

The pace of economic activity was not uniform throughout 1949. National income and product continued their upward postwar movement throughout 1948 but turned downward in the first half of 1949. With the recovery of industrial production and construction, there was a general firming in business activity following this moderate downward adjustment.

Meaning of Income and Product Measures.—National income, as measured by the U.S. department of commerce, is the sum of the net earnings of labour and property arising from the current production of goods and services by the nation's economy. It measures, therefore, the total factor cost of the goods and services produced by the economy. It includes income in kind as well as money income, but such receipts as relief, unemployment benefits, pensions and capital gains are excluded since they do not represent earnings derived from current productive activity. The national income consists of compensation of employees, the net income of unincorporated businesses, corporate profits, net interest and the rental income of persons.

Personal income is the current income received by persons from all sources, including transfers from government and business but excluding transfers among persons. Not only individuals (including owners of unincorporated enterprises), but nonprofit institutions and private trust and welfare funds are classified as persons. Personal income differs from national income by the inclusion of transfers (such as relief, pensions and government interest disbursements) which are not in return for current productive services, and by the exclusion of earnings (social insurance contributions, undistributed corporate income and corporate income taxes) which are not actually received by persons in the current period.

Gross national product or expenditure is the market value of goods and services produced by the nation's economy, before deduction of depreciation charges and other allowances for business and institutional consumption of durable capital goods. Other business products used up by business in the accounting period are excluded. The gross national product consists of consumers' purchases of goods and services; the gross output of capital goods retained by private business, including the change in inventories; net foreign investment; and the goods and services purchased by governmental entities.

Distributive Shares of the National Income.—A substantial reduction in the income of farm proprietors was the principal change in the distributive shares of national income from 1948 to 1949. There were comparatively minor changes in the proportions of national income formed by the other broad types of earnings. (*See* Table I.)

Wages and salaries were stable from 1948 to 1949 at a level of $135,000,000,000, as higher average earnings offset a small reduction in the total number of workers employed. Government pay rolls, including civilian and military, advanced from $19,100,000,000 to $20,700,000,000 over the two years, whereas private-industry pay rolls declined from $116,100,000,000 to $114,300,000,000. This small decline was centred in manufacturing, which was the sector in the nation's nonfarm economy most directly affected by the business downturn in the first half of 1949.

Table I.—*National Income by Distributive Shares*
(In 000,000,000s of dollars)*

Item	1939	1947	1948	1949†
National income	72.5	201.7	226.2	222.0
Compensation of employees	47.8	127.6	140.3	140.5
Wages and salaries	45.7	122.3	135.3	135.0
Private	37.5	104.8	116.1	114.3
Military	.4	4.0	3.9	4.1
Government civilian	7.8	13.6	15.2	16.6
Supplements to wages and salaries	2.1	5.3	5.0	5.5
Employer contributions for social insurance	1.5	3.5	3.0	3.4
Other labour income	.5	1.8	2.0	2.1
Income of unincorporated enterprises and inventory valuation adjustment	11.3	38.5	42.8	39.1
Business and professional	6.8	23.1	24.5	24.1
Income of unincorporated enterprises	6.9	24.7	24.9	‡
Inventory valuation adjustment	—.2	—1.6	—.4	‡
Farm	4.5	15.4	18.4	15.0
Rental income of persons	3.5	6.5	6.6	6.6
Corporate profits and inventory valuation adjustment	5.8	25.6	32.6	31.5
Corporate profits before tax	6.5	31.6	34.8	28.8
Corporate profits tax liability	1.5	12.5	13.6	11.5
Corporate profits after tax	5.0	19.1	21.2	17.3
Dividends	3.8	7.0	7.9	8.4
Undistributed profits	1.2	12.1	13.2	8.9
Inventory valuation adjustment	—.7	—6.0	—2.2	2.7
Net interest	4.2	3.4	3.8	4.2

*Detail will not necessarily add to totals because of rounding.
†First three quarters actual; last quarter estimated.
‡Not available.
Source: Department of Commerce.

Nearly all of the 1948–49 decrease of business earnings in the noncorporate sector occurred in agriculture. The aggregate net income of farm proprietors dropped from $18,400,000,000 to $15,000,000,000, chiefly because of lower farm prices. The share of national income (7%) formed by farmers' net income in 1949 was appreciably lower than in the preceding postwar years but compared favourably with that in the war and prewar periods.

The corporate profits component of national income—corporate profits and inventory valuation adjustment—was an estimated $31,500,000,000 in 1949, as compared with $32,600,000,000 in the preceding year. The decline in this measure of corporate earnings was very much less than that shown by corporate profits before tax. The sizable drop in the latter measure, from $34,800,000,000 to $28,800,000,000, reflected very largely the predominant corporate practice of charging inventories to cost of sales in terms of prior-period prices, rather than current replacement prices. In 1948, when prices were rising, the replacement cost of inventories used in production exceeded the reported book cost; and the opposite was true in 1949, when the course of prices was downward. The inventory valuation adjustment—the difference between the book cost and the current replacement cost of inventories used in production—is added reported profits before tax in order to eliminate inventory prof and losses and thus secure a measure of earnings of current pr duction appropriate for inclusion in the national income.

Table II.—*National Income by Industrial Origin*
(In 000,000,000s of dollars)*

Industry	1929	1939	1947	1948	1949†
Total national income	87.4	72.5	201.7	226.2	222.0
Agriculture, forestry and fisheries	8.0	6.1	19.2	22.5	18.8
Mining	2.1	1.6	4.1	4.9	4.0
Contract construction	3.7	2.3	8.4	10.2	10.2
Manufacturing	22.0	17.9	60.9	68.2	64.5
Wholesale and retail trade	13.1	12.1	39.5	45.1	45.3
Finance, insurance and real estate	13.1	8.2	15.7	16.7	17.2
Transportation	6.6	4.5	11.1	12.2	11.8
Communications and public utilities	2.9	2.9	5.2	5.9	6.6
Services	10.2	8.1	18.5	20.0	20.8
Government and government enterprises	5.1	8.6	18.8	20.0	22.3
Rest of the world‡	.6	.2	.4	.5	.5

*Detail will not necessarily add to totals because of rounding.
†First three quarters actual; last quarter estimated.
‡Consists chiefly of net property income receipts from abroad.
Source: Department of Commerce.

National Income by Industrial Origin.—Estimates of n tional income by industries are shown in Table II. National i come classified by industrial origin furnishes a measure of t net value added by each industrial segment to the net nation output. Viewed from a different standpoint, "income originating measures the earnings of the economic resources utilized in t various industries.

Relative to the all-industry decline of 2%, there was co siderable variation among industries in the rate of incom change from 1948 to 1949. Sizable declines occurred in minin (18%), agriculture (16%) and manufacturing (6%). The were increases of 12%, on the other hand, in government an in communications and public utilities. Comparatively min changes were recorded for the other industrial divisions.

Gross National Product.—The 1948–49 decline in the gro national product was accounted for by a substantial drop in i ventory investment demand. In 1948, when inventories we still rising to meet postwar requirements, there was an inve tory accumulation of $6,500,000,000. In 1949, however, the was a small liquidation of inventories. Aggregate demand f the nation's output for purposes other than inventory inves ment was higher in 1949 than in 1948, in both dollar and re terms.

Business inventories represented the major element of decl in gross private domestic investment from 1948 to 1949. Oth elements of private investment demand—constituting busine purchases of newly produced capital assets, including resident dwellings bought by owner occupants—were reduced in t aggregate only from $38,600,000,000 to $37,200,000,000. Indu trial and commercial building and business outlays for durab equipment declined moderately, but the value of residential co struction completed in 1949 virtually equalled that in the p ceding year.

Table III.—*Gross National Product or Expenditure*
(In 000,000,000s of dollars)*

Item	1939	1947	1948	19
Gross national product	91.4	235.7	262.4	25
Personal consumption expenditures	67.5	166.9	178.8	17
Durable goods	6.7	22.0	23.5	2
Nondurable goods	35.3	96.2	102.2	9
Services	25.5	48.8	53.1	5
Gross private domestic investment	9.9	31.1	45.0	3
New construction	4.9	13.8	17.9	1
Producers' durable equipment	4.6	17.2	20.7	2
Change in business inventories	.4	.1	6.5	—
Net foreign investment	.9	8.9	1.9	
Government purchases of goods and services	13.1	28.8	36.7	4
Federal	5.2	15.7	20.9	2
State and local	7.9	13.1	15.8	1

*Detail will not necessarily add to totals because of rounding.
†First three quarters actual; last quarter estimated.
Source: Department of Commerce.

Net foreign investment, which measures the net export goods and services commercially financed, expanded sharply the early postwar period because of the heavy demand for U goods by foreign countries whose economies were disrupted the war. From a negative balance of $1,400,000,000 in 1945 foreign investment rose to a peak rate of $10,200,000,000 the second quarter of 1947. It declined sharply thereafter, t level of $1,900,000,000 in 1948 and to approximately zero 1949. The decline reflected mainly the growing exhaustion foreign dollar and gold resources. It represented partly, ho ever, a shift to U.S. government grants under the Fore Assistance act as a means of financing exports. Exports financed are counted as federal government purchases in gross national product.

Government purchases of goods and services advanced from ,700,000,000 in 1948 to $43,500,000,000 in 1949. Both the eral and the state and local governments contributed to this ansion, which served as considerable offset to the decline in al demand emanating from private sectors of the economy. e sharp rise in federal purchases of goods and services, from ,900,000,000 to $25,700,000,000, stemmed largely from inased outlays for foreign aid and from larger military expendies. Expenditures for goods and services by state and local ernments rose $2,000,000,000, mainly as a result of increases public pay rolls and in outlays for schools, highways and er types of construction.

Expenditures for personal consumption, which account for re than two-thirds of the gross national product, totalled 8,500,000,000 in 1949, virtually the same as in 1948. Since average of consumer prices was somewhat reduced, coner expenditures in real terms were higher in 1949 than in previous year.

Although the total was little changed, there was a marked ft in the composition of consumer purchases from 1948 to .9. Outlays on durable goods were higher in 1949, mainly bese of larger acquisitions of automobiles. Expenditures on vices increased by about $3,000,000,000. Purchases of nonable goods, on the other hand, were reduced nearly $5,000,0,000. About half of the decline was in food and beverage lays, reflecting mainly lower prices, with reduced outlays on arel accounting for most of the remainder.

Disposition of Personal Income.—Estimates of personal ine and its disposition are provided in Table IV. As already

Table IV.—*Personal Income and Disposition of Income*

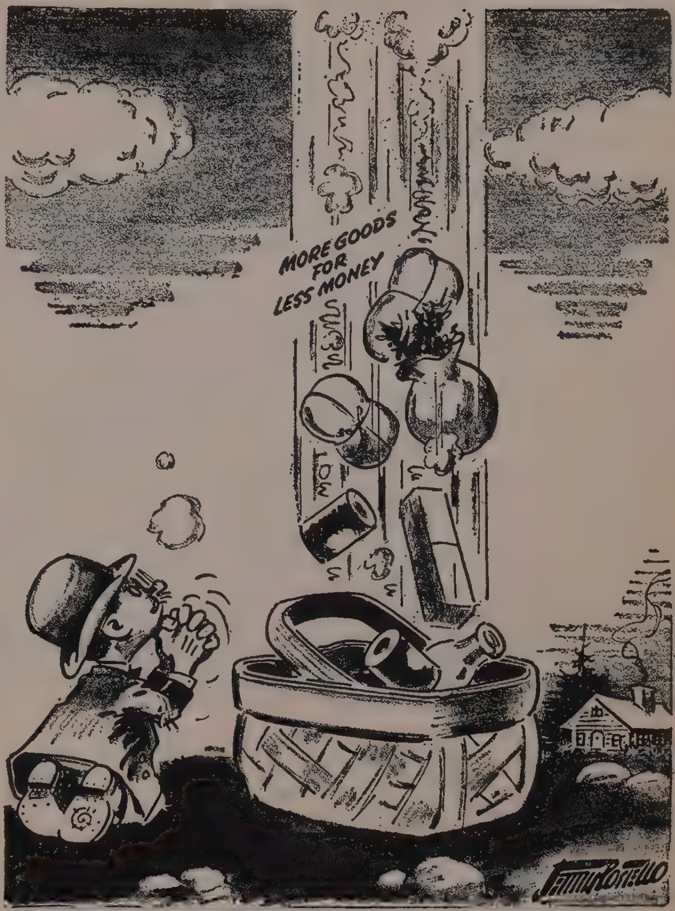
(In 000,000,000s of dollars)*

m	1939	1947	1948	1949†
onal Income	72.6	193.5	211.9	209.9
age and salary receipts	45.1	120.2	133.1	132.8
Total employer disbursements	45.7	122.3	135.3	135.0
Less: Employees' contributions for social insurance	.6	2.1	2.1	2.2
ther labour income	.5	1.8	2.0	2.1
oprietors' and rental income	14.7	45.1	49.5	45.7
vidends	3.8	7.0	7.9	8.4
rsonal interest income	5.4	7.8	8.3	8.8
ansfer payments	3.0	11.7	11.1	12.0
Personal tax and nontax payments	2.4	21.5	21.1	18.8
Federal	1.2	19.6	19.0	‡
State and local	1.2	1.9	2.1	‡
ls: Disposable personal income	70.2	172.0	190.8	191.5
Personal consumption expenditures	67.5	166.9	178.8	178.5
ls: Personal saving	2.7	5.1	12.0	13.0

etail will not necessarily add to totals because of rounding.
rst three quarters actual; last quarter estimated.
ata not available.
ource: Department of Commerce.

ed, personal income was only slightly lower in 1949 than in preceding year. With the sizable reduction in personal es, reflecting both the lower rates in effect in 1949 and reds on 1948 tax payments, disposable personal income was ually a little higher than in 1948. As a consequence, coners were able in 1949 not only to maintain the volume of ir expenditures for goods and services at the 1948 level, but to save somewhat more than they did in the previous year.

Personal saving amounted to 6% of disposable income in 9. This is in contrast to the saving rate of more than 20% ing the period 1942–45, when wartime shortages and conls and heavy borrowing to finance federal war expenditures ulted in unprecedented personal saving. After the war peral saving declined rapidly, reaching the abnormally low level 3% in 1947. This decline, which reflected the effects of the klog of deferred demand and the accumulation of liquid ets which had been built up during the war, was an impor t stimulus to economic activity in the early postwar period. e subsequent increase in the rate of personal saving to 6% 1948 had a reverse influence. It helped to check inflationary forces at the height of the postwar boom. (*See* also BUDGET, NATIONAL; BUSINESS REVIEW; DEBT, NATIONAL; WEALTH AND INCOME, DISTRIBUTION OF.)


MORE GOODS FOR LESS MONEY
LOW

"OPERATION PRICE-DROP," a cartoon by Costello, printed in the *Knickerbocker News* (Albany) in 1949

FILMS OF 1949.—*Productivity: Key to Plenty* (Encyclopædia Britannica Films Inc.). (C. F. Sz).

Income Tax: *see* TAXATION.

India, Dominion of.

A self-governing member of the British Commonwealth of Nations in southern Asia comprising 9 provinces, 12 centrally administered areas and 9 Indian states' unions. Area: *c.* 1,243,886 sq.mi., including Kashmir. Pop.: (1941 census) 320,387,000, (1948 est.) 342,114,000. As a result of the partition of the Indian subcontinent in Aug. 1947, by the end of 1948 nearly 5,363,000 non-Moslems entered India and about 6,599,000 Moslems migrated to Pakistan. Languages fall into two main groups: Aryan or northern (Hindustani or Hindi, Marathi, Punjabi, Gujarati, Bengali, etc.) and Dravidian or southern (Telugu, Tamil, Kanarese, etc.); on Sept. 14, 1949, the Indian constituent assembly decided to retain English as the official language of the union, to be displaced by Hindi in Devanagari script within 15 years. Religions: mainly Hindu, with Moslem, Christian, Sikh, Buddhist, Parsee, Jewish and other minorities. Chief towns (1941 census): Delhi (cap., 521,849); Calcutta (2,108,891); Bombay (1,489,883); Madras (777,481); Hyderabad (739,159); Ahmedabad (591,257); Cawnpore (487,324); Amritsar (391,010); Lucknow (387,177). Governor general, Chakravarti Rajagopalachari; prime minister and minister for external relations, Pandit Jawaharlal Nehru (*q.v.*). (*See* also PAKISTAN, DOMINION OF.)

History.—The principal event of the year 1949 from the political point of view was the conference of commonwealth prime ministers held in London in April. They came to the unanimous decision that, after becoming a sovereign independent republic in Jan. 1950, India would continue in the interests of world peace to be a full member of the British Commonwealth of Nations. The king would remain the symbol of the free association of its independent member nations and, as such, the head of the commonwealth. This solution of a delicate problem met with general approval. Rajendra Prasad, president of the Indian constituent assembly, expressed the general opinion of the country when he said: "We wish to remain on the friendliest terms with Great Britain, so long as our sovereignty and independence of action are not affected in any way . . . I am personally satisfied with the formula which has been evolved." Under existing arrangements, India would be proclaimed an independent sovereign republic on the next Remembrance day, Jan. 26, 1950. India would be known in future by the ancient Hindu name of Bharat.

The Integration of the States.—The absorption of the princely states reached its final stage under the forcible direction of Sardar Patel. It took three forms: mergers with adjacent provinces, grouping with other states and conversion into centrally administered areas. The two great Maratha states of Kolhapur and Baroda, with a population of 17,500,000 and an area of about 100,000 sq.mi., were merged into the province of Bombay. Twenty-five, including the leading Moslem state of Bhopal, became centrally administered areas, while the bulk of the rest, covering an area of approximately 235,000 sq.mi. with a population of 37,500,000, were integrated into nine unions or groups, each under a *Rajpramukh* or prince president. The most important of these was the Union of Greater Rajasthan. The unification of these proud and independent princes was an outstanding achievement in itself. The maharaja of Bikaner became *Rajpramukh* for life, while the venerable maharana of Udaipur retained his position as titular head. In the far south, Travancore and Cochin were integrated into a single unit. India's constitution, as applicable to the states, was accepted by Mysore.

All this involved radical changes in the status of the states and their rulers. Sweeping administrative reforms, including the integration of finances, were effected; the provinces and states were placed on an equal footing with the centre, and the states' forces were merged with the Indian army. The princes became constitutional rulers, and the limitation of their privy purses meant that their courts were shorn of much of the pomp and ceremony traditionally associated with them.

Hyderabad remained under the occupation of an Indian military force under Gen. J. N. Chowdhury, assisted by a civil administrator, and the ultimate fate of the once premier Indian Moslem state was still undecided. On Nov. 24 the nizam signed an instrument of accession to the Indian union, subject to its subsequent ratification by a representative assembly.

The Kashmir Dispute.—In Kashmir, the year opened brightly with the announcement that a truce had been arranged. No one was more relieved than the members of the two armies, who had engaged with deep distaste in a fratricidal conflict with their old comrades in arms. Representatives of the United Nations conciliation commission arrived in March, and visited the heads of the two governments at New Delhi and Karachi for consultation, and a U.S. naval officer, Adm. Chester W. Nimitz, was appointed plebiscite administrator. Proceedings were to be carried out in three stages: first, a cease-fire was to be proclaimed and the troops were to be withdrawn behind agreed lines; then law and order were to be restored and invaders who had crossed the border during the disturbances ejected; finally, a plebiscite was to be held.

Each side, however, was deeply suspicious of the other and unwilling to forego the military advantages that it had gaine
and matters were further complicated by authorized violatio
of the truce and by irresponsible utterances on the part
political leaders and the press. The main obstacle in the way
an agreement was the uncompromising attitude of the India
government. Pandit Nehru and his advisers persisted in the
claim that the maharaja, Sir Hari Singh, had legally acceded
the Indian union, and that Sheikh Abdullah was *ipso facto* th
head of the government. On these grounds the government
India demanded the disbandment of the Azad forces (the Kas
mir resistance movement) and reserved four seats for repre
sentatives from Kashmir in the Indian legislature. The gover
ment of Pakistan on its part declared that this was prejudgin
the issue. The question of expelling the 2,000,000 Sikh an
Hindu refugees as well as the tribesmen before holding th
plebiscite had been evaded.

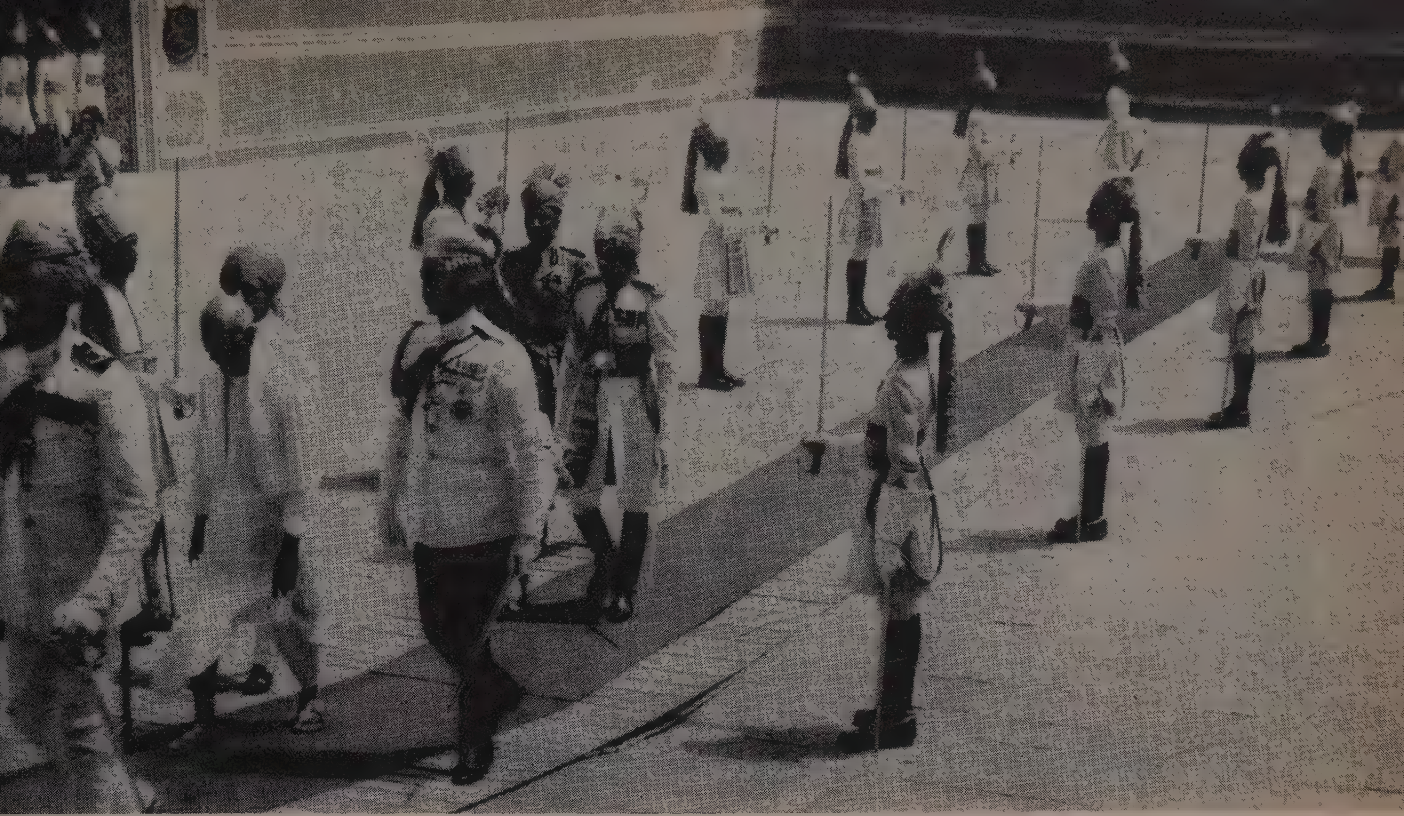
Matters reached such a deadlock by the end of August tha
Pres. Harry S. Truman and Prime Minister Clement R. Attle
in the interests of the peace and stability of the subcontinen
sent letters to both governments appealing to them to agree
the United Nations' proposals and accept Admiral Nimitz
arbitrator. On Sept. 17, Pandit Nehru announced that after d
consideration the government of India rejected the United N
tions Kashmir commission's proposal for arbitration.

Communism.—The Communist challenge remained the ou
standing problem for the Indian government. The methods e
ployed were the familiar ones of sabotage, arson and lootin
and the chief aims of the Communists were the capture of
trades unions and the dislocation of the transport system.
mass rising planned for March 5 was forestalled by prompt a
resolute action. One of the main storm centres was Calcutt
where unemployment was heavy. The government was forced
amend the labour laws with a view to preventing strikes
essential services. Matters became so alarming in August th
Pandit Nehru made a series of tours in the worst affected are
and this had a calming effect. But the movement was not co
fined to the cities, and in Bombay and Madras and adjace
districts of Hyderabad it assumed the proportions of an agrar
revolt, on lines only too familiar in Burma and Malaya. La
lords and moneylenders in outlying districts were killed,
the lands redistributed among the peasants.

Trade and Commerce.—Despite these handicaps, considera
industrial progress was made. India in 1949 had seven
transport companies, operating 27 internal schedule servic
Orders for 500 locomotives were placed in Canada and ot
countries, and more than 22 Indian ships, aggregating 150,
tons, were plying between India, America and the United Ki
dom. Large sums were spent by the ministry of rehabilitat
on evacuation and relief, and steps were taken for the lar
scale manufacture of prefabricated houses.

The financial state of the country was generally sound,
in order to carry out its ambitious program, India, like ot
countries, had to raise foreign capital, which could only
done by buying less and exporting more. For this reason I
decided to follow sterling in devaluing the rupee, 75% of
country's trade being with countries in the soft-currency a
Lasting progress was impossible until agreement, especially
the Kashmir dispute, had been reached with Pakistan and
disproportionate military expenditure thereby drastically
tailed. In October and November, Pandit Nehru paid visits
the U.S., Canadian and British governments. In October I
was elected to the U.N. Security council. (*See* also UN
NATIONS.) (H. G. RN

Education.—(1942–43) Primary schools 176,034, pupils 11,594,
middle schools 11,227, pupils 1,392,931; high schools 4,164, p
1,339,846; special schools 11,780, pupils 433,165; universities 15;
institutions of higher education 455, students 148,635. Illiteracy (1



DAR PATEL (in white robe), deputy premier of India, and the Maharajah
aipur (right of Patel), arriving for the swearing in of the Maharajah as
of the newly created Union of Greater Rajasthan, March 30, 1949. The
n, a new state in the Indian dominion, merged 15 separate states formerly
d by princes

).

nance and Banking.—Budget: (1948–49 est.) revenue Rs. 2,305,000,-
expenditure Rs. 2,574,000,000; (1949–50 est.) revenue Rs. 3,077,-
000, expenditure Rs. 3,225,000,000. National debt (est. 1948): Rs.
00,000,000. Gold reserve (Sept. 1949): $247,000,000 U.S. Bank
osits (Sept. 1949): Rs. 7,070,000,000. Monetary unit: rupee with
exchange rate (Dec. 1949): R. 1=20.94 U.S. cents.

oreign Trade.—Imports: (1948) Rs. 5,188,000,000; (1949, six months)
3,386,000,000. Exports: (1948) Rs. 4,228,000,000; (1949, six
nths) Rs. 1,973,000,000. Main sources of imports (1948): United
gdom 29%, United States 20% and Burma 4%. Main destinations of
orts (1948): United Kingdom 23%; United States 17% and Japan
).

ansport and Communications.—Roads (1948): 190,500 mi. Licensed
or vehicles (Dec. 1948): cars 141,346, commercial vehicles 97,791.
ways (March 1948): 33,985 mi. Shipping: total tonnage of the
chant marine approximated 300,000 in 1948. Telephones (April
8): 115,331. Radio licences (March 1947): 243,838.

griculture.—Main crops (in metric tons, 1948): wheat 5,434,000;
ey 2,528,000; maize 1,757,000; rice 28,748,000; cotton, ginned,
000; jute 368,000; tea 248,000; cottonseed 830,000; linseed 370,-
; sesame 356,600; rapeseed and mustard 794,000; peanuts 3,122,000;
r, raw, 4,984,000. Livestock (1945): cattle 136,369,000; sheep
31,000; pigs 3,704,000; buffaloes 40,610,000.

dustry.—Fuel and power: coal (in metric tons, 1948; 1949, six
nths, in parentheses) 30,301,000 (15,996,000); electricity, (1948;
, six months, in parentheses) 4,579,000,000 kw.hr. (2,416,000,000
hr.); petroleum (1947) 65,192,235 gal. Raw materials (in metric
, 1948; 1949, six months in parentheses): pig iron 1,487,000; steel
ts and castings 1,222,000 (671,000); iron ore 2,450,000. Gold
48) 171,700 fine oz. Manufactured goods (1948; 1949, six months,
arentheses): cotton yarn (in metric tons) 654,000 (318,000); cot-
fabrics (metres) 3,960,000,000 (1,824,000,000); rayon fabrics
tres) 104,200,000; cement (metric tons) 1,524,000.

LMS OF 1949.—*India, Asia's New Voice* (March of Time, Forum
ion).

ia, French: *see* FRENCH UNION.

ia, Portuguese: *see* PORTUGUESE COLONIAL EMPIRE.

iana.

An east north central state of the United States
with the popular name of "Hoosier," Indiana was
itted to the union Dec. 11, 1816, as the 19th state. Total
of the state is 36,325 sq.mi., including 314 sq.mi. of inland
s and rivers. The population of the state, according to a
1, 1949, estimate of the U.S. bureau of the census, was
4,000, a 16½% gain since 1940. The 1940 official census
wed the population to be 55.1% urban and 44.9% rural;
% native white, 3.2% foreign-born white and 3.6% Negro. Capital: Indianapolis (pop. 1940, 386,972), the largest city. Other cities: Fort Wayne (118,410); Gary (111,719); South Bend (101,268); Evansville (97,062); Hammond (70,184); Terre Haute (62,693); East Chicago (54,637); Muncie (49,720); Anderson (41,572).

Political History.—The general assembly met in regular session in 1949, with a Republican senate and a Democratic house of representatives. It distinguished itself more for the bills it resisted than for those it passed. Thus, the assembly refused to repeal the public utility compulsory arbitration law, to pass a measure sponsored by the Congress of Industrial Organizations for a state Wagner act, to boost the gasoline tax, to institute a direct primary system, to install a merit system in the department of conservation or to streamline the state government. Legislation that was enacted included a veterans' bonus act, to be financed from an increased state income tax and to be paid when sufficient funds accumulated; four school bills that increased state aid, raised minimum salaries of teachers, prohibited racial segregation and affected local school consolidations; a law permitting sex offenders to be committed to mental institutions; an act for reassessment of real estate, the first since 1932; and retention of central standard time the year around for state offices.

Officers of the state during the year were: Henry F. Schricker, governor; John A. Watkins, lieutenant governor; Charles F. Fleming, secretary of state; F. Shirley Wilcox, treasurer; James M. Propst, auditor; J. Emmett McManamon, attorney general; Deane E. Walker, superintendent of public instruction. All were Democrats.

Education.—The number of public schools in the state in 1949 was 2,311. Enrolment in the elementary or common schools was 484,945, with 13,262 teachers. Enrolment in the high schools (grades 9–12) was 164,194, with 7,100 teachers. Parochial schools had an enrolment of 46,560 in the elementary grades and 8,629 in high school. For the year 1948–49, the state appropriated $53,000,000 for the support of schools, in addition to the sums provided by local units of government. The state provided $17,214,117 for the four state colleges.

Social Insurance and Assistance, Public Welfare and Related Programs.—In 1948–49 the state's welfare program cost $29,275,342, of which $16,385,251 was furnished by federal funds, $7,884,438 by state funds and $5,005,653 by county funds. Old-age assistance cost $22,629,420, blind assistance $880,173, aid to dependent children $5,765,749. In addition, child welfare and committed adults cost $3,590,132 from state and county funds. Receipts of the state for unemployment insurance for the year ending June 30, 1949, were $18,605,810. Benefits paid out were $17,801,410, not including federal payments to war veterans.

In 1949 the state maintained nine institutions for mental patients, including an epileptic village; eight homes, hospitals and schools; and four penal and correctional institutions. As of June 30, 1949, inmates of mental institutions totalled 13,128 and inmates of correctional institutions 5,824.

Communications.—The total mileage of state highways at the beginning of 1949 was 10,482 out of a total of 76,700 mi. of roads in the state. Expenditures of the state highway commission on roads in the fiscal year 1948–49 amounted to $41,212,482. There were 6,600 mi. of steam railroads (first main tracks) and 341 mi. of electric railroads. The estimated number of telephones in the state on Dec. 1, 1949, was 1,100,000. There were 142 commercial airports, 1 seaplane base and 93 personal landing fields.

Banking and Finance.—On June 30, 1949, there were 366 state banks and trust companies with total resources of $1,481,818,165 and total deposits of $1,381,546,750. There were 125 national banks with total resources of $1,687,167,120 and total deposits of $1,580,363,608. State savings and loan companies numbered 167 as of Dec. 31, 1948, with assets of $191,487,211. The assets of the 69 federal savings and loan companies as of Nov. 30, 1949, were $273,786,324.

Leading Agricultural Products of Indiana

Crop	1949	1948	Average, 1938–47
Corn, bu.	247,052,000	285,060,000	196,245,000
Wheat, bu.	39,532,000	38,162,000	27,271,000
Oats, bu.	55,825,000	56,459,000	42,807,000
Soybeans, bu.	33,166,000	32,098,000	20,686,000
White potatoes, bu.	3,900,000	4,140,000	4,756,000
Barley, bu.	550,000	486,000	1,171,000
All tame hay, tons	2,212,000	2,231,000	2,639,000
Tobacco, lb.	15,720,000	14,370,000	10,957,000
Mint for oil, lb.	886,000	1,050,000	
Apples, bu.	1,715,000	1,018,000	1,344,000
Peaches, bu.	794,000	559,000	413,000
Watermelons, melons	2,320,000	2,782,000	
Tomatoes for processing, tons	350,400	568,000	

Agriculture.—The record corn crop produced in 1948 was not equalled in 1949. Tomatoes and mint also declined, but fruit production increased. The hay crop continued its drop.

Mineral Production.—For the year 1948 approximately 10,800,000 tons of coal were taken from 70 shaft mines. About 13,800,000 tons were taken from strip mines. Approximately 7,797,191 bbl. of oil were pumped from 2,954 wells in 1948. (H. H. P.)

Indians, American.

The action of the secretary of the interior in including in the reserves for Alaska natives the fishing waters adjacent to the Karluk Indian village on Kodiak Island had been challenged in the courts by the commercial fishing interests and carried through the supreme court of the United States. The supreme court on May 31, 1949, held that these waters constituted a legitimate part of such a reserve, but stated that the reserves authorized under the 1936 act were of a temporary nature and might be discontinued by congress at any future date without giving the natives any basis for a claim against the government. While the Karluk case was in the courts several bills were introduced in congress to discontinue the establishment of reserves and to abolish the reserves already authorized. None of these bills was passed.

On Nov. 30, 1949, the secretary of the interior authorized the establishment of three more reserves at Barrow, Hydaburg and Shungnak-Kobuk, Alaska, applications for which had been held up pending the outcome of the court action and congressional discussions.

On March 17, 1949, congress authorized the transfer of a former army hospital at Brigham City, Utah, to the Indian service to be remodelled into a boarding school for Navaho children, to relieve in some degree the lack of school facilities confronting about 14,000 children of school age. Later, $3,750,000 was appropriated by congress for the necessary remodelling and new construction to accommodate 2,000 children, making it the largest Indian school in the United States.

On Oct. 3, 1949, congress passed a bill authorizing the expenditure of about $88,000,000 over a ten-year period for the rehabilitation of the Navaho people. During its passage through congress this bill was subjected to several amendments which provided for concurrent jurisdiction of the state courts of Arizona and New Mexico in the administration of law and order on the reservation, recommended the use of the state courses of study in Navaho federal schools and set up certain requirements in connection with the reorganization of self-government on the reservation. Believing that these amendments might work to the disadvantage of the Navaho people, Pres. Harry S. Truma vetoed the bill but instructed the department of the interior an the bureau of the budget to submit as part of the 1951 budge estimates, proposals for the construction of schools, hospital roads and irrigation works, and for the extension of the of reservation placement program, all of which were importar phases of the proposed rehabilitation.

During June the second Inter-American Conference on India Affairs was held at Cuzco, Peru. The conference was to hav been held in 1943, but was postponed because of World War I The United States was again an active participant. The Nation Indian Institute of the United States, the participating repre sentative of the U.S. in the Inter-American Indian institut which was an outgrowth of the first Inter-American Indian co gress in 1940 and which had been allowed by Congress to laps for lack of funds, was revived during the year. The institut undertakes the study of problems of education, health, economi and political development of American Indian population throughout the hemisphere, and co-operates with the variou national and local governments in organizing assistance in th solution of these problems.

On April 14, 1949, Secretary of the Interior Julius A. Kr announced the appointment of John R. Nichols, president of th New Mexico College of Agriculture and Mechanical Arts ne Las Cruces, to be commissioner of Indian affairs. Five mont after taking office, Nichols announced a reorganization of th field staff of the Indian service which resulted in the establis ment of 11 area offices for the more direct administration Indian affairs. These field offices were located at Aberdeen, S.D Albuquerque, N.M.; Anadarko, Okla.; Billings, Mont.; June Alsk.; Minneapolis, Minn.; Muskogee, Okla.; Phoenix, Ari Portland, Ore.; Sacramento, Calif.; and Window Rock, Ariz.

FILMS OF 1949.—*Meet the Sioux Indian* (Associated Film Artists *Navajo Indians of the Painted Desert* (Bailey Films Inc.); *Peoples of Skeena* (National Film Board of Canada). (W. W. B.)

Indo-China, French: *see* FRENCH UNION.

Indonesia, Republic of the United States of.

The republic of the United States of Indonesia (Republik Ind nesia Serikat) came into being on Dec. 27, 1949, when Que Juliana of the Netherlands signed the charter of the transfer sovereignty of the territories of the Netherlands Indies (w the exception of New Guinea; area: 152,089 sq.mi.) to Indonesian people. The republic consists of seven participati states (negara) and nine independent political units (daer Total area: *c.* 583,000 sq.mi. Total pop.: about 70,000,0 Capital: Jakarta (Batavia) (pop., mid-1949 est.: 1,200,00 President of the republic: Achmed Soekarno; prime minis and minister of foreign affairs, Mohammed Hatta; Netherla high commissioner, H. M. Hirschfeld.

The seven negara of the republic are: the Indonesian public, proclaimed Aug. 17, 1945, capital, Djokjakarta; E Indonesia (Indonesia Timur), comprising Celebes, Bali, Lo bok, Sumba, Sumbawa, Flores, Halmahera, Timor and the M luccas, proclaimed Dec. 1946, capital, Makassar; West J (Pasundan), proclaimed Feb. 26, 1948, capital, Bandoeng; Java (Djawa Timur), proclaimed Dec. 3, 1948, capital, Soe baja; Madoera (Madura), proclaimed Feb. 20, 1948, cap Pamekasan; East Sumatra (Sumatera Timur), proclaimed 25, 1947, capital, Medan; South Sumatra (Sumatera Selat proclaimed Aug. 30, 1948, capital, Palembang.

The nine daera are: Central Java, Bangka, Billiton, Rio West Borneo, Great Dayak, Bandjar, South-East Borneo, E Borneo. (For the history of Indonesia in 1949 *see* NETH LANDS OVERSEAS TERRITORIES.)

ndustrial Health. The year 1949 was marked by tendencies toward co-operation between la- our, management, government and the affected professional roups with a view toward acceleration of existing programs nd avoidance of duplicated effort. The public health service of e Federal Security agency appointed an advisory board of epresentation from these major groups to give advice and uidance in the expanding services provided by its division of ndustrial hygiene. The first meeting produced resolutions advo- ating intensified research, testing of materials, field services, reater interest in medical care plans for industrial workers, in e occupational effects of atomic energy, occupational-disease eporting and air pollution. The division also completed an in- ensive investigation of the smog disaster at Donora, Pa. No ingle substance was incriminated but rather a summation of everal atmospheric contaminants, the evidence pointing par- cularly to sulphur dioxide and particulate matter. The report alled attention again to the unsatisfactory state of knowledge bout the toxicological effects of mixed irritant gases. During e year a number of symposiums were conducted on this same ubject by leading medical, engineering and smoke-prevention gencies.

Reduction in industrial accidents assumed new importance rough a conference called by Pres. Harry S. Truman, attended y the leading technical experts who prepared detailed plans for rogress. The bureau of labour standards in the department of bour undertook leadership in this national endeavour. Mean- hile, the National Safety council and the American Medical ssociation appointed a joint committee on accidents.

The demand for qualified industrial physicians stimulated reater interest in training. The American Medical association lso approved the first hospital for residency training in occu- ational medicine. Surveys were completed of industrial medical ducation provided by medical schools and schools of public ealth for undergraduate and postgraduate instruction. Many hysicians were expected to qualify for special certification by e newly created American Board of Preventive Medicine and ublic Health. The *Journal of Industrial Hygiene and Toxi- ology*, after several decades of independent publication, was erged with *Occupational Medicine,* to be published by the merican Medical association as *Archives of Industrial Hygiene nd Occupational Medicine*.

The American Academy of Compensation Medicine assumed ajor significance as a means toward improved medical service injured workers. Legislation in South Carolina, New Jersey, Vest Virginia, Nevada, Delaware, Rhode Island and Utah em- hasized the trend toward general rather than schedule coverage r occupational diseases. New York amended its workmen's ompensation act to provide disability benefits for nonoccupa- onal sickness, a significant departure from practices in several ther states where this form of administrative responsibility ad been assigned to unemployment bureaus. Indiana became e 41st state to adopt legislation authorizing a second injury und. (C. M. Pn.)

Canada.—During 1949, the industrial-health division of the epartment of national health and welfare investigated new con- itions, new processes and new substances which could create ccupational hazards unless workers were protected from undue xposure to them. At the request of provincial health depart- ents, surveys were carried out in several areas and occupa- onal exposures were determined in coal mines, foundries, fer- lizer plants, machine shops and quarries. Medical and labora- ory investigations were made for several departments of the ederal government on lighting, noise and contamination of air y toxic substances.

The health radiation branch of the federal Atomic Energy project reported that the best available method of measuring exposure of personnel to gamma rays was by means of films. Thus every person at the project wore a type-K Kodak dental film, held in a slot behind the photo badge. Additional safeguards in the form of finger and wrist films were used in the chemistry branch of the division of atomic-energy research. As film monitoring provided only for a weekly radiation check, persons who might have received the weekly permissible exposure in less than six days wore a pencil-type ionization chamber.

The most significant 1949 development in aviation medicine was a special intensive course for all physicians conducting flying-fitness examinations for Canadian pilots (for commercial pilots, every 6 mo.; for private pilots, every 12 mo.).

Bibliography.—The Industrial Health Division of the Dept. of National Health and Welfare in co-operation with the Division of Industrial Hygiene of the Ontario Dept. of Health, *A Guide to the Diagnosis of Occupational Diseases*, 1949. (C. Cy.)

Great Britain.—The National Insurance Industrial Injuries act, 1946, came into force on July 5, 1948. The comprehensive act, by including workmen's compensation, both for injury and prescribed industrial diseases, had an important bearing on industrial medicine. The administrative machine of the ministry of national insurance, which dealt with matters relating to injury and industrial disease in place of the legal procedure necessitated by the former Workmen's Compensation act, worked smoothly and fairly.

The 1948 Factories act introduced, for the first time, provision for the medical care of young persons in industry. This was an important step forward and meant that young persons between the ages of 15 and 18 could not only be examined on their entrance into industry, as had been the case before the passing of the act, but would also have a further examination once a year. These examinations took place either in the factory or at the surgery of the appointed factory doctor, a title new in English law.

In the *Annual Report* for 1948 of the chief inspector of factories, reference was made to the incidence of the pneumoconioses (diseases of the lungs caused by the habitual inhaling of minute mineral or metallic particles), and it was shown that there were 885 deaths during the year from asbestosis, silicosis and pneumoconioses. This large number of deaths illustrated only too dramatically the medical, social and industrial magnitude of this problem. A medical research council team working under the direction of C. M. Fletcher at Cardiff, Wales, was doing much to solve some of the major conflicting difficulties which had surrounded the aetiology of this disease. The latest information would appear to be that the heavy incidence of the disease in the anthracite mines of south Wales was due not necessarily to the quality of the dust produced but rather to the quantity produced and inhaled by the miner at the coal face.

The relationship of cancer of the lung to asbestosis and silicosis was demonstrated by E. R. A. Merewether in the *Annual Report* for 1947 of the factory department of the ministry of labour and national service. Of the 235 deaths from asbestosis which occurred between the years 1942 and 1946, inclusive, cancer of the lung or pleura was found to be present in 31 cases (13.2%), an incidence of statistical importance. Comparison was made in the report between the incidence of cancer in asbestosis and silicosis, and an analysis of 6,884 deaths due to silicosis demonstrated cancer of the lung or pleura at postmortem in only 1.32% of the cases examined. (*See* also Accidents; Medicine; Public Health Engineering; Public Health Services.)

(A. J. Ar.)

Industrial Production: *see* Business Review.

Infantile Paralysis.

A progressive increase in the number of cases of poliomyelitis (infantile paralysis) in the United States during 15 years reached a high peak in 1949. The average number of cases per year for the period 1935–39 was 6,784; for 1940–44, 10,885; and for 1945–49, 24,800. The epidemic of 1949, totalling almost 45,000 cases, covered most of the country, whereas previous epidemics were more limited geographically, and the affected areas tended to shift from year to year.

The incidence of poliomyelitis was also unusually high during 1949 in Austria, England, France, Germany, India and New Zealand.

An outbreak of considerable medical interest occurred in the winter of 1948–49 among the Eskimo population in the Chesterfield area just west of Hudson's bay. There was an especially high mortality and paralytic rate (estimated at 5% and 14%, respectively, of the entire population in the Chesterfield area). The infecting agent was identified by laboratory tests as poliomyelitis virus, and it appeared to have been transmitted by clinically healthy human carriers.

Following are recent developments in poliomyelitis research:

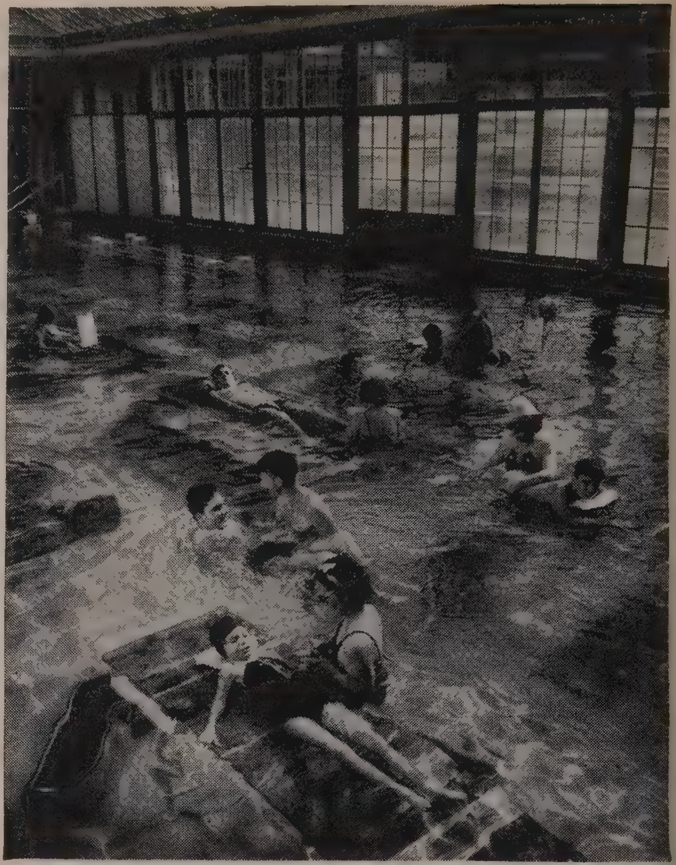
In the United States, a virus previously unknown was identified and proved responsible for a human disease so closely resembling the milder types of poliomyelitis that physicians were unable to distinguish between the two diseases. The virus is called the Coxsackie or C virus, named for the village in New York where it was first isolated by G. Dalldorf and G. M. Sickles in 1948. In addition to human beings, this virus is infectious for immature mice and hamsters, but not for adults of the same species. Several immunologically distinct types of it were found, none identical with any of the known types of poliomyelitis virus. It was isolated from flies, from sewage and from numerous human cases presenting symptoms of nonparalytic poliomyelitis. Through 1949 there was no published report of its isolation from any human paralytic case on which concomitant tests for poliomyelitis virus were clearly negative. Poliomyelitis and Coxsackie viruses had been found simultaneously, however, in stools from the same patient.

A continuing major difficulty in the preparation of poliomyelitis vaccines was the necessity of using infected monkey spinal cord as the source of virus. This limits the material available; entails a danger of inducing an allergic inflammation of the recipient's own nervous tissues; and involves technical difficulties in treatment of the material with agents designed to inactivate the virus without destroying its power to stimulate resistance. A possible solution of these problems was found in the successful growth of poliomyelitis virus in cultures of nonnervous human tissues. Two antigenically distinct types of poliomyelitis virus were so cultured, in tissues from the limbs and intestines from stillborn human infants. One type of the virus was also carried through a series of passages in cultures of skin from the prepuce of boys.

A systematic testing of poliomyelitis viruses was started in 1949 and scheduled for completion by 1952. While several hundred viruses were available, each isolated from a different human patient, the only property these were definitely known to possess in common was that each had produced typical symptoms and pathology of poliomyelitis in a susceptible animal. Their relationships to each other were still for the most part undetermined. Of 30 viruses that had been studied through 1949, all fell into three groups. An animal rendered immune to a virus in any one group was similarly immune to all others of the same group, but not to the viruses of the other two groups.

Other studies provided convincing proof that the paralytic consequences of human poliomyelitis may be minimized by bed rest during the early preparalytic stages of the disease. Additional evidence was also advanced to show that the chances of developing poliomyelitis are heightened by pregnancy and by removal of the tonsils and adenoids during a time when the virus is prevalent in the community. (*See* also EPIDEMICS; MEDICINE; PUBLIC HEALTH SERVICES.)

(H. M. WR.)


POLIO PATIENTS, afloat in the warm water pool at Warm Springs, Ga., as physical therapists re-educated them to muscle control

Infant Mortality.

The long-term downward trend in infant mortality in the United States continued into 1949, with a drop of about 2% from the rate for 1948, according to provisional indications. There were an estimated 113,000 deaths under one year of age in 1948, with an infant mortality rate of 31.8 per 1,000 live births. The infant mortality rate in the United States had been cut to about half within a period of two decades. Despite this record of improvement, the situation was still relatively poor among nonwhite infants who in 1947 (the latest year of complete data in 1949) experienced a death rate of 48.5 per 1,000 live births, as compared with a rate of 30.1 for white infants. Within the United States, the best showing in 1947 was made by white infants in Oregon, with a rate of 24.1 per 1,000, and in Connecticut, with a rate of 24.6 per 1,000. All of the New England, middle Atlantic, north central and Pacific coast states, with the exception of Michigan and Missouri, had lower rates for white infants than the national average; the two exceptions were only a little above the average. The states with records above average were concentrated in the south and in the mountain area. Among white infants in urban centres, the rate per 1,000 live births was 29.9, somewhat lower than the rate of 30.4 per 1,000 for rural areas. In cities of 100,000 or more, the rate was only 27.7 per 1,000.

Taking sex into account, infant mortality rates per 1,000 live births in the United States in 1947 were as follows: white—males 33.9, females 26.0; Negro—males 52.4, females 42.9;

other races—males 70.2, females 61.0. An idea of the marked variation in mortality within the first year of life may be gained by comparing the monthly experience. Thus, in 1947, there were 22.8 deaths under one month of age per 1,000 live births. For the second month of age, the rate was only 2.0 per 1,000; for the fifth month it was 1.0 and for the twelfth month, 0.3 per 1,000.

The principal causes of death in infancy in 1947, with their rates per 1,000 live births, were: premature, 11.1; congenital malformations, 4.6; pneumonia and influenza, 3.6; injury at birth, 3.5; diarrhoea and enteritis, 1.5; congenital debility, 0.5; whooping cough, 0.4; and syphilis, dysentery, tuberculosis and convulsions with 0.1 each. With the exception of congenital malformations, each of these conditions had registered sharp declines in their rates in the brief period since 1940. For example, the rates for pneumonia and influenza and for diarrhoea and enteritis were cut to less than half. All but 2% of the deaths from premature birth and from injury at birth occurred within the first month of life; practically two-thirds of the deaths from congenital malformations fell within that period. On the other hand, only one-quarter of the deaths from influenza and pneumonia were within the first month of life.

Infant mortality was found to be low where the proportion of hospitalized births was high, according to a study by Marion E. Altenderfer and Beatrice Crowther (*Public Health Reports*, vol. 64, p. 311, March 18, 1949). According to this report, the benefits come not from hospitalization per se, but from the aseptic environment, the greater skill available, the facilities for emergencies and the possibility of better prenatal care. The point was also made that the close relation of low infant mortality with high per capita income stems principally from the large proportion of births hospitalized where income is high.

Another report showed little variation in infant mortality from one calendar month of the year to another (*Statistical Bulletin*, Metropolitan Life Insurance Company, June 1949). Although the rates tended to be lowest in summer, the advantage over the other months was small. This was in definite contrast to the situation at the beginning of the century, when the summer rates rose far above the rates for the other months of the year. The principal factor in this changed picture was the sharp reduction in mortality from diarrhoea and enteritis. In New York state, this cause accounted for about one-third of all infant deaths in 1904–1908, as compared with about one-twentieth in 1944–1948.

Canada in 1948 recorded 15,163 deaths under one year of age and an infant mortality rate of 44 per 1,000 live births. The rates were lowest in British Columbia (33 per 1,000), Prince Edward Island (34) and Ontario (35); the highest rates were recorded in New Brunswick (61) and Quebec (54). The infant mortality rate in England and Wales in 1948 was 34.4 per 1,000 live births; the rate for 1949 was about 4% lower, according to provisional data for the great towns during the first nine months. New Zealand in 1948 had the very low rate of 21.9 per 1,000 live births. (*See* also DEATH STATISTICS.)

BIBLIOGRAPHY.—National Office of Vital Statistics, various annual, monthly and special reports; United Nations, *Monthly Bulletin of Statistics* and *Demographic Yearbook* (*1948*); Population Association of America, *Population Index* (issued quarterly); Metropolitan Life Insurance Company, *Statistical Bulletin* (issued monthly). (M. SP.)

Inflation: *see* BUSINESS REVIEW; CONSUMER CREDIT; PRICES. *See* also under various countries.

Influenza: *see* PNEUMONIA.

Inland Waterways: *see* CANALS AND INLAND WATERWAYS.

Insanity: *see* PSYCHIATRY; PSYCHOLOGY.

Insects and Insecticides: *see* ENTOMOLOGY.

Instalment Buying and Selling: *see* CONSUMER CREDIT.

Insulin: *see* DIABETES.

Insurance.

Life Insurance.—At the end of 1949 nearly 85,000,000 persons owned about $234,000,000,000 of life insurance protection in the legal reserve life insurance companies of the United States and Canada. This was only slightly in excess of one year's income of the United States and Canadian peoples. The premiums paid in 1949 for life insurance and annuities exceeded $7,000,000,000 or slightly more than 3% of the people's income.

Payments made to policyholders and beneficiaries by United States and Canadian companies in 1949 reached a new peak of more than $3,500,000,000. More than half of this went to living policyholders in the form of matured endowments, surrender values, dividends, etc. If the increases in reserves held to assure payment of future benefits are included with payments to policyholders and beneficiaries, then more than $7,000,000,000 was paid or credited in 1949 to United States and Canadian families by the legal reserve companies of the two countries.

In 1949 new life insurance issued exceeded $25,000,000,000 for the third year in succession. The net increase in life insurance outstanding was about $14,000,000,000.

At the end of 1949 the people of the United States also had more than $50,000,000,000 additional life insurance protection, of which about $43,000,000,000 was in United States government and National Service Life Insurance policies and the balance was in policies issued by fraternal and assessment associations, etc. In addition, the social security survivorship benefits were equivalent, in the aggregate, to a very large amount of life insurance.

During 1949 the assets of United States and Canadian legal reserve life insurance companies increased by about $4,000,000,000 to reach $63,700,000,000, of which approximately 93% was held by United States companies. The companies in the United States regained first rank among the major savings depositories of the American people, but the percentage increase since 1942 was less than for any of the other principal types of personal saving.

The opportunity for life insurance companies to invest in productive enterprises continued to be substantial in 1949 but it was somewhat less than in 1948. The United States companies' holdings of corporate securities, mostly public utility and industrial bonds and notes, increased by nearly $3,000,000.000. Their mortgage holdings, mainly on homes and commercial properties, increased by about $2,000,000,000. At the year end, they held more than $23,000,000,000 of corporate securities and nearly $13,000,000,000 of mortgages; these two categories of investments together represented about 60% of all the assets of United States legal reserve companies.

The holdings of United States government securities declined again in 1949 but such securities still totalled about $15,000,000,000 at the end of the year, or more than 25% of the assets of the United States companies. The decline in 1949 was only about half as much as in 1948, partly as a result of the decreased dollar volume of other types of new investments available in 1949 as compared with 1948.

The interest rate earned by the United States companies on their total assets was 2.88% in 1947 and 2.96% in 1948. It was anticipated that the interest rate earned by the companies in 1949 would be close to the figure for 1948. During the latter part of 1949 interest rates obtainable on new investments of funds for policyholders fell, this being in large measure a reflection of the government's easy money policy. (L. A. L.)

Fire Insurance.—The premium income of private companies in the United States showed a smaller increase in 1949 than in the two previous years, with earned volume estimated at $2,750,-

000,000, but the total fire waste for the year dropped more than $40,000,000 below the 1948 experience. The companies, generally, made a profit in addition to their increased equities in the unearned premium reserve, whereas many had underwriting losses on fire insurance in each of the four years which preceded 1948. The losses of those years and an approximate gain of 12% in 1949 averaged about 2% underwriting profit for the companies over the five-year period.

Companies registered in Canada were officially estimated to have written $103,000,000 in 1949, an increase of 5% over 1948 writings, with a loss ratio of 44%. On the basis of incurred losses to earned premiums, this ratio would be increased but would still show a profit for the companies. The year 1949 was an off year for the renewal of three-year term policies on manufacturing and mercantile properties, which accounted partly for the smaller increase in writings, compared with the two previous years.

Marine Insurance.—The year 1949 witnessed a substantial drop in the total marine premiums written in the United States, but underwriters expected that the loss experience would be better than in the previous year. In 1947 and in 1948 the marine premiums of U.S. companies were about three times those written in 1938. The higher values of vessels and increased value of cargoes contributed largely to this result. The world shortage of dollars and the small extent to which U.S. companies participated in the insurance on Economic Cooperation administration shipments, the sale to foreign owners of a large number of government owned vessels and strikes which harassed shipping on the Great Lakes all contributed to a reduced volume of premium writings. During the year adoption for general use of the York-Antwerp rules of 1924 as amended contributed to more uniform average adjusting. During the year two outstanding Marine losses occurred. The burning of the "Noronic" in Toronto, Ont., was one of the worst ship fires on the Great Lakes in a century; one of the largest hull losses ever suffered by marine underwriters resulted from the stranding and breaking up of the British steamer "Magdalena" off the Brazilian coast.

Most such insurance written in Canada is in the field of inland marine insurance. That classification produced an increase of approximately 9% over 1948 in premiums written, with losses estimated at 47½%. Allowing for the reserve for unearned premiums the underwriters anticipated a small profit on these writings. Changes in the supervision of this business, in behalf of underwriters, was expected to improve the experience, particularly in the personal property floater classification.

Casualty Insurance.—Aggregate premiums showed large increases for most companies since World War II, but not all companies showed increases for 1949. The classification produced a satisfactory profit, with the majority of lines profitable in varying degrees. More automobiles were manufactured than in any previous year and this kind of insurance, with more nearly adequate premium rates, produced the largest increase in insurance writings. Bodily injury insurance for automobiles continued to be profitable, and the underwriters expressed hope that rate adjustments would enable them to overcome the disastrous experience of previous years in property damage insurance. The passage of financial responsibility laws in several states during 1949 was expected to stimulate an increase in the number of insured cars.

Workmen's compensation insurance continued to be profitable but it was expected that the reduction of total pay rolls in many industries would cause a falling off of premium income for such insurance.

In Canada automobile insurance, which is not included in the casualty classification, continued to show a loss for the carriers. Expert estimates of the 1949 experience placed the premium increase at 12½% over the preceding year, with losses at 52% of written premiums. Calculated upon premiums earned by the companies, this ratio would be substantially increased, showing a considerable debit balance. A 15% rate increase in all Canadian provinces, effective Jan. 1, 1949, was not sufficient to make this classification profitable. In the province of Ontario a further rate increase for collision insurance on private cars became effective Jan. 1, 1950. All casualty lines in Canada, including automobile, showed an approximate increase of 14% in premium writings with a loss ratio of nearly 50%, which would be higher on an earned premium basis. (*See* also FIRES AND FIRE LOSSES; SOCIAL SECURITY; VETERANS' ADMINISTRATION, U.S.)

(L. E. F.)

Hospital, Medical and Surgical.—Inclusion by U.S. labour unions of health and welfare demands in contract negotiations, notably in the steel and automotive industries, was probably the most significant development in this field during 1949. Acceptance by management of the principle of company-paid welfare benefits provided a new stimulus toward increased prepaid health service through private channels.

At least 17 bills were introduced in the U.S. congress embodying varying approaches to the provision of health care through government, but none was reported favourably out of committee hearings. Those receiving most attention were the Thomas bill (S.1679), the 1949 version of the earlier Murray-Wagner-Dingell bills, supported by President Truman and Federal Security administrator Oscar R. Ewing, the Hill bill (S.1456) to provide care through private plans with government assistance to the states and the Taft bill (S.1581).

Membership in nonprofit Blue Cross hospital service plans reached more than 36,000,000 by the end of the year, while nonprofit Blue Shield plans covered 14,000,000 for surgical benefits and 7,000,000 for medical care. Commercial insurance covered 25,000,000 for some type of hospital benefits, 19,000,000 for surgical benefits and 3,000,000 for medical benefits. Industrial, co-operative and other miscellaneous programs included about 4,000,000 persons for each coverage. Total coverages, therefore, were 66,000,000 for hospitalization, 37,000,000 for surgical and 14,000,000 for medical. Blue Cross plans established Health Service, incorporated to supplement benefits provided by local plans to national accounts, and the Inter-Plan Service Benefit bank, to provide service benefits to subscribers hospitalized away from home on a reciprocal basis. The year was also notable for expansion of the scope of certificate benefits provided by both Blue Cross and commercial carriers.

Continuance of national government health care systems was not an election issue in any country having such a system, although labour governments in Australia and New Zealand, original sponsors of those countries' programs, were defeated. Both major parties pledged continuance of the national health scheme in England.

(A. G. S.)

Great Britain.—Trading results published during 1949 in Great Britain disclosed further expansion in premium income and considerably improved trading results. An analysis of the accounts showed that in 1948 the total premium income from fire and accident insurance combined, for 24 representative British offices, rose by £27,122,000 to £244,224,000, and produced an underwriting surplus of £15,313,000, equivalent to 6.3% of the premiums. Marine premiums were higher by £5,329,500 at £33,382,000, and trading results were favourable.

Total new ordinary life sums assured in 1948 was only slightly below the record figure of £500,000,000 attained in 1947. During 1949, much new business was brought in by the growing popularity of "family protection" assurance and staff pension schemes, but it was evident that the economic pressure on salaries and incomes would leave its mark upon the total new busiless production for the year.

The high level of new business attained by the industrial life offices, which was a feature of 1946 and 1947, was not repeated during 1948, the total new business of eight leading industrial companies, at £188,692,000, being £28,174,000 less than in 1947. It was anticipated that increased national insurance contributions would have at least a temporary restrictive effect upon the flow of new business, and this in a year of decline in the general level of savings proved 1949 one of consolidation rather than of spectacular progress.

Fire losses in the United Kingdom were again heavy in 1949, the experience in farming risks being exceptionally severe because of an abnormally dry summer. The trend of insurance values was to higher levels, consequent upon the continued inflation of values, and coverage against consequential losses following industrial fires was in increased demand. Overseas claims attributable to politically disturbed conditions continued to weigh heavily on the business.

Motor premium income was well maintained, but the high cost of repairs, especially in respect of cars of new design, combined with the heavy sums awarded as damages for personal injuries, rendered trading results variable and delicately poised.

Diminution of marine premium income arising out of the removal of the combined marine surcharge and the effects of the amendment to the Joint Hull Underwriting understanding were more than offset by the increased sterling value of a considerable portion of the premium income following the operation of the new exchange rates during the last quarter of the year.

Plans for the nationalization of the industrial assurance companies and societies—including ordinary life assurance, fire, accident and general business transacted by these institutions—were replaced toward the end of the year by a proposal that industrial assurance should be conducted on the principle of "mutual ownership." Under this modified plan the proprietary companies in the field of industrial assurance would be owned by the policyholders themselves instead of by private shareholders. The outline of the plan left many important questions unanswered.

FILMS OF 1949.—*Sharing Economic Risks; American Portrait* (Association Films). (P. Ss.)

Insurance, Old Age: *see* SOCIAL SECURITY.
Inter-American Highway: *see* ROADS AND HIGHWAYS.
Interior, U.S. Department of: *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

Interior Decoration.

Trends in interior design and decoration for 1949, like those of the year before, were less notable for any novelties or drastic changes than they were for a continuing high level of professional excellence, both in design and execution. Judged by long-range standards, they could be characterized as broadening, deepening and augmenting many of those phases which had slowly been emerging since the end of World War II.

At the same time, contemporary design advanced in all phases, and it was estimated that in 1949 it could claim a good 40% of all design. This substantial gain, it was believed, could be credited to both manufacturing and retailing. On the part of designers and manufacturers, it indicated new accomplishments in attaining the right results at lower costs. And at the retailing level, a good portion of the new success was believed to be the result of the efforts of the many small shops throughout the United States.

One result of the determined efforts to meet the demands of decorative excellence and lower price was a broadening of the variety of materials used. Essentially, the need was for acceptable materials which presented the lowest initial cost and upkeep. For example, one designer turned to burlap for wall coverings. Shellacked to a fine finish, it not only provided the texture of a fabric but also was easy to clean.

Ordinary hollow red tile, used as a part of the construction as well as for interior decoration, eliminated the need for paint or plaster. Mortar was used to fill in between the tile, and wood strips were added over the mortar to create a variation in decoration; then the tile was varnished, and a handsome and efficient interior wall surface was the result.

Various types of tile for flooring in homes, aluminum sills and baseboards, and plastics and plastic coated materials of all types were added to the list of materials for home use.

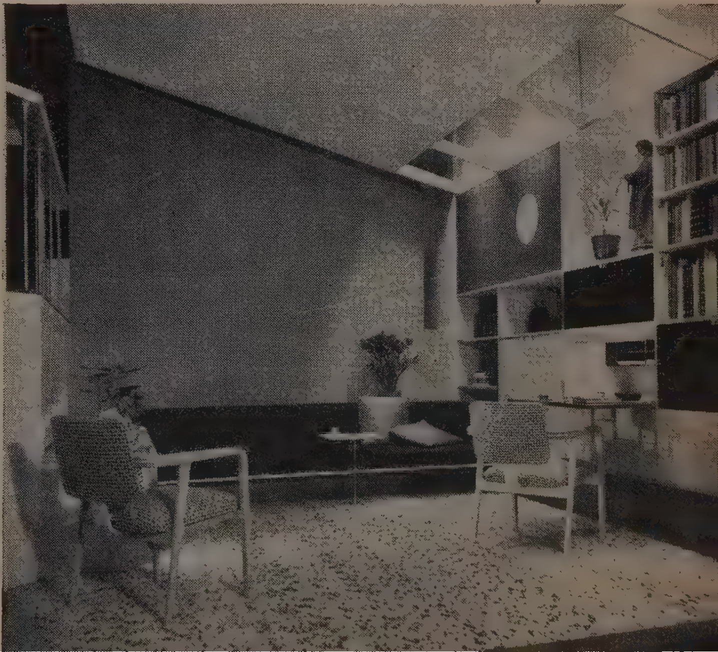
Natural woods in their natural states, neither bleached, stained nor painted, but with a protective coat only, were used in an increasing degree. Woods which had been little used, such as chestnut and beech, or ash treated with gray stain, found increased acceptance, while completely new woods from South America were introduced. Among these last were two that won particular notice, Korina and Alvoro, both tropical woods which were naturally light in colour and did not have to be bleached to achieve a true blond finish. Both had interesting grains and patterns and bore a slight resemblance to mahogany.

New finishes were toward the softer, warmer tones. Various shades of gray, especially in oak and walnut, were popular, and cordovan, a very dark brown, appeared more and more in contemporary dining room groups and occasional pieces.

Furniture design on the whole was lighter, more colourful and less bulky. Many of the designs provided comfort and support, without bulk or mass or weight, through lighter construction and use of metals with wood, with no loss of style and beauty. Pivot furniture, too, emerged from purely industrial and commercial usage to home adaptations and appeared in lounge and occasional chairs often recommended for television settings. Pivot tables were designed to be lowered or raised, to suit home use and convenience, and could also be turned around like the well-known lazy susan.

Basically significant in the construction of furniture was the increased use of foam rubber for upholstery filling. Because it is light and airy and can be shaped in any fashion desired, it fostered an entirely new look in upholstered furniture, one that was trim and tailored in feeling, light and smooth and still

A STUDY with furniture, designed by George Nelson, which formed part of a gallery of interiors at the exhibit "For Modern Living." The exhibit was opened at the Detroit Museum of Art in Sept. 1949



supremely comfortable.

In fabrics, new printed wools for upholstery and new variety in hand-woven textures provided highly decorative possibilities. Plastics and plastic coated materials were improved as were glass fibres and fabrics. Nylon glass curtains appeared in colours as well as in white and in a few beautifully printed patterns. Drapery fabrics of nylon were also introduced in heavier weaves, puckered and shirred for decorative effects.

An interesting innovation for window treatment was the blind made of flexible slats like a venetian blind, but hung vertically instead of horizontally across a window. These could be pulled back at either side to give a full window view. When covered with fabric, they took the place of draw draperies. Match-stick draperies appeared for the window in a modernized form. Made of long, slim strips of the inner core of rattan and held together by woven cotton thread, they were formerly used only as roll-up blinds. The new version could be hung vertically at the window and as draw draperies; they were available in colours as well as in the natural rattan. Like casement cloth they provided a decorative covering for the window without shutting out light and air.

In floor coverings, a significant trend during the past years had been the production of textured floor covering (not imitations but the real thing) in popular and low-priced Axminster weaves. In 1949, entirely at the other end of the price scale were the new Nylon carpets with a silvery sheen, highly decorative and guaranteed for more than a lifetime of hard, heavy wear.

In hard-surfaced floor coverings, the new patterns in plastic materials showed more diversity and style than the first presentations along this line. They were resistant to spots, stains, alkalies and grease and were waterproof and easy to keep clean. A wider choice of colours was also made available.

Newest of all plastic floor coverings was one which looked much like any other type but was manufactured by an entirely new process. The pattern was actually a very thin layer of colour sandwiched between a regular felt base and a coating of tough transparent vinyl plastic. The patterns themselves were reproduced through a photographic process which permitted infinite variety, including exact duplication of rubber or ceramic tile, wood grains and even woven rug patterns in exact patterns and colours.

Of all of the phases of interior decoration, lighting showed perhaps the least change in 1949. Emphasis was still largely on spot lighting, achieved either with concealed light and pin-spots, or with the familiar bullet-shaped fixtures.

(G. M. J.)

International Bank for Reconstruction and Development.

Activities of the International bank expanded greatly during 1949 along two main lines: in the volume of actual loans which the bank granted; and in the substantially increased amount of technical assistance and other services which the bank rendered its member countries.

With regard to lending operations, the bank, from Jan. 1 to Dec. 1, made a total of 11 loans aggregating $206,600,000. The majority of these loans were for the purpose of assisting in the economic development of member nations.

Latin America.—The bank made two loans to agencies of the Mexican government for electric power development. The first loan, of $24,100,000, was made to finance purchases by Mexico's Federal Electricity commission of equipment needed for constructing generating stations, transmission lines and distribution systems in various parts of Mexico. A second loan, of $10,000,000, was made to assist in financing a program for expansion of electric generating and distribution facilities of the Mexican Light and Power Company, Ltd., in the Mexico City area. Both loans were guaranteed by the Mexican government.

The bank made a loan of $75,000,000, which was guaranteed by the government of Brazil, to the Brazilian Traction, Light and Power Company, Ltd., a Canadian corporation, to finance most of the foreign exchange costs of a four-to-five year program for expansion of hydroelectric power and telephone facilities of the company's Brazilian subsidiaries, which operate in the Rio de Janeiro and São Paulo areas. A loan of $5,000,000 was granted to the Caja de Credito Agrario, Industrial y Minero, a developmental institution in Colombia, to finance the purchase of modern agricultural machinery. This loan was guaranteed by the Colombia government.

Europe.—The bank made a loan of $16,000,000 to the kingdom of Belgium to finance imports of equipment for the construction of two privately owned steel mills and a power plant in the industrial district of Liége. A loan of $12,500,000, which was guaranteed by the government of Finland, was made to the Bank of Finland for reconstruction and modernization of wood-working industries, electric power development and expansion of production of limestone powder used in agriculture. Another loan of $15,000,000 was granted to the Finance Corporation for National Reconstruction (Herstelbank) of the Netherlands for 24 projects involving reconstruction or modernization of Dutch industry. This loan was guaranteed by the Netherlands government.

Loans of $2,300,000 and $2,700,000, respectively, were made to the republic of Finland and the federal people's republic of Yugoslavia for the purchase of timber-producing equipment in order to develop the production and export of timber in those countries and enhance east-west trade within Europe.

Asia.—The bank extended its first credits to a member country in Asia when it granted two loans to India. The first loan, of $34,000,000, was made to assist in financing a broad program of railway improvement being carried out by the Indian government, mainly through the purchase of locomotives. A second loan, of $10,000,000, was for the purchase of heavy agricultural machinery needed for the reclamation of weed-infested lands and for clearance of jungle land.

These lending operations brought the total loans made by the bank from the time it began operations to Dec. 1, 1949, to $731,600,000.

The increased tempo of the bank's activity in 1949 was not confined to the granting of loans. As the year ended, the bank was actively investigating additional projects in about 20 member countries. Discussions with a number of other countries were also proceeding to determine how the bank could help most constructively in the solution of their problems. And there was a marked increase in the amount of technical assistance of various kinds furnished to member nations.

At the request of its members, the bank, during the year, sent about 30 missions to member countries in Latin America, Europe, the middle and far east. While the functions of these missions necessarily varied in each particular case, they included mainly the following: examining specific projects proposed for bank financing; assisting a member country in drawing up an over-all development program suited to its needs; or making comprehensive survey of the general economic situation in member country and assisting in designing measures for improving its financial stability and credit standing.

The bank engaged in no direct borrowing operations during 1949. It further developed, however, another type of marketing technique, begun in 1948, by selling from its loan portfolio securities issued to it by borrowers under its loans. During the year the bank sold, with its guarantee, to institutional investor the United States the $16,000,000 of bonds received in conection with its loan to Belgium, and the last $3,900,000 of ortgage notes received in connection with its loans to four utch shipping companies.

The bank's operations for the fiscal year ended June 30, 1949, esulted in an excess of income over expenses of approximately 10,600,000. The total excess of income over expenses since the ank began operations to Sept. 30, 1949, amounted to about 16,800,000.

Membership in the bank was increased to 48 countries with ne admission of Thailand. In addition, membership applications f Liberia and Haiti were approved by the bank's board of overnors, subject to completion of necessary formalities.

At its annual meeting held in Washington, D.C., in September, ne board of governors approved the bank's fourth annual eport. This report stated that an outstanding feature of the ear was the increased attention given to the problem of ecoomic development. It described the bank's objectives in this eld as essentially the same as those announced by Pres. larry S. Truman in the Point Four program. The bank can elp speed the rate of development by both technical and finanial assistance, the report stated, but it cautioned that there is o quick and easy way to raise production levels and living tandards, and that it is only the amount of productive investnent which takes place and not the mere availability of money vhich is important. (*See* also BANKING.) (E. R. BL.)

On July 1, 1949, Eugene R. Black assumed office as president f the International Bank for Reconstruction and Development, ucceeding John J. McCloy, who was appointed U.S. high comissioner for Germany.

nternational Children's Emergency Fund: *see* CHILD VELFARE.

nternational College of Surgeons: *see* SOCIETIES AND SSOCIATIONS.

nternational Confederation of Free Trade Unions: *ee* DEMOCRACY; LABOUR UNIONS.

nternational Court of Justice.

On April 9, 1949, the International Court f Justice gave final decision in the Corfu Channel case—*United Kingdom* v. *Albania*. It held that Albania was responsible under nternational law for the explosions that occurred in Albanian vaters on Oct. 22, 1946, resulting in the loss of one British estroyer and damage to another with heavy loss of life. The ourt reserved for later consideration the assessment of the mount of compensation to be paid by Albania.

On two other questions raised by the agreement between the arties under which the court was proceeding: *i.e.*, whether acts f the British navy in those waters (1) on Oct. 22 and (2) in weeping the waters about three weeks later, to determine the ature of the explosions, constituted a violation of Albanian overeignty, as contended by Albania, the court decided the rst question in the negative and the second one in the affirmaive. Money damages were not allowed, the court concluding hat its declaration constituted in itself sufficient satisfaction o Albania.

The Court issued an order fixing time limits for the submision of written observations regarding damages claimed by the Jnited Kingdom.

On July 1, 1949, the Albanian agent filed with the court a tatement contending that under the special agreement signed y the two agents on March 25, 1948, the court had solely to onsider the question whether Albania was obliged to pay comensation for the damage done on Oct. 22, 1946, and was not hereby authorized to fix the amount of the compensation or to ask Albania for information on the subject. Albania filed no observations and refused to appear at the hearings held on Nov. 17.

On Nov. 19 the court designated Rear Adm. J. B. Berck and G. de Rooy, both of the royal Netherlands navy, as a committee of experts to examine the figures and estimates filed by the United Kingdom covering loss of the destroyer "Saumarez" and damage to the "Volage." Their report was filed on Dec. 1 and was promptly communicated to the parties, who were given until Dec. 10 for submission of written observations.

On Dec. 6 the United Kingdom government stated that, inasmuch as the experts had concluded that the claim submitted by it might be taken as a fair and accurate estimate of the damage sustained, it did not wish to make further observations.

On Dec. 10, shortly after expiration of the time limit, the Albanian government, which, it will be recalled, had denied the jurisdiction of the court and had refused to submit observations on the claim or to appear before the court at the hearings on Nov. 17, filed with the court a letter stating that it desired to make observations in the form of direct questions to be put to the experts in a session of the court, or, in the alternative, to be given until Dec. 23 for the filing of written observations.

The court declined to accede to this request and on Dec. 15, by a vote of 14 to 2, decreed that Albania should pay to the United Kingdom the sum of £843,947.

Advisory Opinion.—By a resolution of the general assembly of Dec. 3, 1948, the court was asked for an advisory opinion as to:

> 1. Whether in the event of an agent of the United Nations suffering injury in the performance of his duties in circumstances involving the responsibility of a state, the United Nations, as an organization, had capacity to bring an international claim against the responsible government for reparation in respect of damage caused (a) to the organization, (b) to the victim or to persons entitled through him?
> 2. How, in the event of an affirmative answer to point 1 (b) just stated, action by the organization was to be reconciled with such rights as might be possessed by the state of which the victim was a national?

The court gave its opinion on April 11, 1949. It was unanimous in answering question 1 (a) in the affirmative. Eleven judges answered question 1 (b) in the affirmative and four were of opinion that no such capacity existed. They thought that under international law such claims were to be dealt with between the state responsible for the injury and the state of which the victim was a national.

On the second part of the question: *i.e.*, as to how action by the United Nations under point 1 (b) was to be reconciled with such right as might be possessed by the state of which the victim was a national, the same 11 judges were of opinion that since the organization in bringing a claim for damages caused to its agent could do so only by basing the claim upon breach of obligations due to itself, respect for this rule should usually prevent a conflict between its action and such rights as the agent's national state might possess; and that in this fashion "reconciliation" between the claims would be effected. This, they said, "must depend upon considerations applicable to each particular case, and upon agreements to be made between the Organization and individual States."

Pending Cases.—At the close of the year 1949 the following cases were pending: *Colombia* v. *Peru:* a question of asylum and safe-conduct involving a Peruvian national who was given refuge in the Colombian embassy in Peru; *Great Britain* v. *Norway:* involving the extent of Norwegian territorial waters inside which fishery interests may be reserved exclusively for Norwegian nationals; *France* v. *Egypt:* relating to the application of certain Egyptian decrees to French nationals and their property. There were requests by the general assembly for advisory opinions on: the interpretation of provisions of peace treaties between certain Allied and Associated Powers and Bulgaria, Hungary and Rumania; whether the general assembly may admit states to membership in the United Nations without a favourable report from the Security council; and the status of territory of South-West Africa over which the Union of South Africa was given a mandate by the League of Nations. (*See* also International Law; United Nations.)

(G. H. H.)

International Labour Organization. The 32nd session of the I.L.O. conference met in Geneva, Switz., June 8–July 2, 1949, with 550 accredited delegates and advisers from 50 member states. Five conventions and four recommendations were adopted. Three conventions—right to organize and collective bargaining, protection of wages and labour clauses (public contracts)—completed the second discussion of work begun at previous sessions. Two—fee-charging employment agencies and migration for employment convention (revised)—were revisions intended to facilitate wider ratification by giving alternative choices in their application.

In addition to these five conventions, the conference adopted partial revision of three maritime conventions and the four recommendations—labour clauses in public contracts; protection of wages; migration of employment (revised); and vocational guidance. This made a total of 98 conventions and 87 recommendations adopted in 30 years with more than 50 conventions in force.

The director-general's report (David A. Morse's first to the conference) stressed intensification and expansion of I.L.O. work as the complement of its deliberative and legislative function. The report was debated during most of 12 days—more than half the working hours of the conference—by 95 speakers, and its unique feature was a critique of world affairs from the viewpoint of a world-wide tripartite—governments, employers, workers. The new emphasis on operational activities was unanimously approved, as were the quest for universality and wider participation of members in ratification of conventions, regional activities, etc.

Application of conventions and ratifications were debated as matters of major concern at the conference. The total number of ratifications registered was 1,011 as reported by the conference committee in June, later increased to 1,039 (October); but the gain in both 1948 and 1949 was only about 35. The committee of experts said that reports of what was done after ratification of conventions and with recommendations were too few and too late. Both committees and the director-general said that, making due allowance for postwar conditions, this situation was critical and united in an appeal to member states for loyalty and a greater sense of obligations incurred by ratification.

The conference adopted a budget of $5,983,526 for 1950, about $800,000 more than for 1949. The increase was caused chiefly by operational activities in the fields of manpower, technical training and migration.

The governing body held three sessions, the 108th and 109th in Geneva in March and June, and the 110th in Mysore, India, in December, in connection with the postponed Asian Regional conference in Ceylon. The body appointed its own tripartite manpower committees for Europe, Asia and Latin America, and arranged for both separate and joint meetings; authorized the office to convene employment service experts in various regions; and established an I.L.O. field office on technical training in Asia. In response to U.N.'s Economic commission's request, it authorized the office to assist countries to develop systems of training supervisors and instructors within industry, and to convene a tripartite meeting of experts from Europea countries. Assistant Director General G. A. Johnson was appointed treasurer, and Wilfred Jenks, legal adviser, and Lui Alvarado of Peru, assistant directors general. Jenks was to continue also as legal adviser.

Regional activities centred in the fourth conference of American states members of the I.L.O. which met in Montevideo Uruguay, April 25–May 7. It dealt with the life and work o indigenous workers, conditions of employment of agricultura workers, industrialization and the efficiency of the labour forc in Latin American countries, particularly with respect to training and health conditions. (*See* also Child Welfare.)

Bibliography.—*Industry and Labour* appeared in enlarged form, twic a month, separate from the *International Labour Review,* with which i was combined in 1940. The *Legislative Series* appeared in Spanish, English and French. Conference documents numbered about 25 and include timely volumes such as: *Report of the Director-General, Equal Remuneration for Men and Women for Work of Equal Value, Industrial Relations* etc. General reports of the industrial committees were published for inland transport, protection of young workers on inland waterways, technical methods of selection of workers, building, civil engineering an public works, iron and steel, metal trades and coal mines. *Studies an Reports, New Series* comprised: *Labour Problems in Greece, Labou Courts in Latin America; International Standard Classification of Occupations* and *Wages and Payroll Statistics.* Miscellaneous publication were: *Year Book of Labour Statistics, 1947–48,* v. 10; *Law and Practic Relating to Safety in Factories; Third Report to the United Nations*

(S. McC. L.)

International Law. Opinions differed during 1949 o whether the world community wa moving in the direction of world federalism, international cooperation, national sovereignty, regionalism, or bipolarity. A distinguished Austrian jurist, Alfred Verdross, defined internationa law as "the law of the community of states" including both th law among states and the law regulating individual behaviou resting upon international agreement. That community, in hi opinion, had become universal, but was not a world state, and i it should become one there would no longer be "internationa law" (*American Journal of International Law* July 1949, Vol. 4 p. 438). Most international jurists emphasized the co-operativ rather than the federalistic character of the world communit stressing the phrase "sovereign equality" of states in article of the United Nations charter. Some, however, interpreted th growing recognition of the status of the individual as man festation of a movement toward world federalism. Broad inte pretations of the veto and the reservation of domestic juri diction in the charter of the United Nations convinced som that state sovereignty had been little curtailed by new instit tions and principles. Others, noting the development of regiona security arrangements, foresaw a period in which such arrang ments would dominate the world community.

Responsible officials, however, generally considered that th immediate future could be characterized by the split betwe the western and soviet groups of states. There was gener agreement that the situation was dangerous. "To be very co crete," said Charles Cheney Hyde, president of the Americ Society of International Law at its annual meeting, "the iss is this: Is there a means short of war whereby the Unit States and the countries of Eastern Europe under Russian i fluence may be convinced that there is a common and practic means of advancing the real interests of each by a process th shuns war and the use of all instruments of war" (*Proceedin* American Society of International Law, April 1949, p. 5). A bassador Philip Jessup, referring to the adverse attitude of t Soviet Union to the North Atlantic treaty, said the treaty was United Nations answer to the problem of collective security. would, he thought, increase security and further pacific sett ment but added: "We stand ready to cooperate with all who w cooperate. The focus of that international cooperation is, a will remain, the United Nations" (*Ibid.*, p. 16). Studies of t oviet attitude toward the state, sovereignty and international aw, and toward the judicial process, especially as manifested in he war-crimes trials and in the important book by Andrei Y. ishinsky, a translation of which was published under the title *he Law of the Soviet State,* gave little ground for optimism. ommunist theory seemed to assume that international relations ust be subordinate to class rivalries, that justice could only be means to party ends, and that capitalist and socialist societies ould not coexist. Consequently theoretical, in addition to many ractical, obstacles lay in the way of conciliation. Students of oslem international law, however, recalled that the doctrine of he *jihad,* which asserted permanent war between Islam and onbelievers, did not prevent the development of stable inter-ational relations between Christian and Moslem states in ourse of time.

These differing conceptions of the world community were illustrated in the United States by several resolutions introduced nto congress during 1949, each supported by a considerable umber of senators and representatives. Among them was one ntroduced by Sen. Charles W. Tobey seeking to develop the nited Nations into a world federation through amendment of he charter. Another, introduced by Sen. Estes Kefauver, sought o develop the North Atlantic pact into a federation, and another introduced by Sen. Elbert Thomas sought to strengthen he United Nations by a supplementary convention open to all embers, the parties to which would pledge themselves to use orce in collective self-defense against a state found to be an ggressor by a two-thirds vote of the general assembly including hree of the principal powers. It was apparent that jurists and tatesmen alike recognized several possibilities in the development of the world community.

General International Organizations.—The International ourt of Justice gave an advisory opinion in April 1949 at the equest of the general assembly holding that the United Nations ad an objective personality entitling it to make claims, as ould a state, against any state, whether a member or not, responsible for injury to its agents. The opinion was requested in onnection with the assassination of Count Bernadotte in Israel, nd following the opinion of the court the general assembly in he autumn of 1949 instructed the secretary-general to present uitable demands for reparation.

During the year there was much discussion of the authority nder international law of the United Nations to interfere in ivil wars and to recognize new states. President Hyde of the merican Society of International Law stated as one of two ajor problems to consider: "How far, and under what circumstances, has the United Nations or any agency thereof Charter-given authority to check or thwart an independent state, itself a ember of the United Nations Organization, in its effort to uppress a revolution within its domain, or to fix the status of revolting colony that seeks statehood by force of arms?" (*Proceedings,* American Society of International Law, 1949, p. 4). he issue was raised by the action of the United Nations in the ndonesian controversy, and in this instance the United Nations uccessfully asserted its authority.

The limitations which the domestic jurisdiction reservation in he charter (article 2, paragraph 7) imposed upon the United ations in dealing with controversies were also involved in the outh African refusal to observe repeated assembly resolutions equesting her to put the formerly mandated territory of South est Africa under trusteeship and to respect the human and reaty rights of Indians living in South African territory. Juristic pinions differed on the issue. Some held that a state could ithhold a matter from United Nations action by declaring it to e "essentially domestic" while others held that United Nations gencies themselves were free to assume that no matter was in the domestic category if it concerned a subject put within the competence of the United Nations by the charter or regulated by international law or treaty. In practice the organs of the United Nations followed the latter interpretation but certain members, resting on the former interpretation, ignored its recommendations.

WINSTON CHURCHILL speaking at the Guildhall in London, England, after receiving the gold Grotius medal presented by the Netherlands Society for International Law on Feb. 3, 1949; the medal is presented for distinguished services in the causes of international peace or international law

By admitting new states to its membership and by accepting the credentials of individuals commissioned by revolutionary governments to represent members, the United Nations undoubtedly qualified the "sovereign right" of other members to recognize or not to recognize such states or governments. Juristic analyses indicated that many types of assembly resolutions necessarily had important legal effects even though in form they were merely recommendations. This was formally true of the general assembly's resolution in the autumn of 1949 disposing of the former Italian colonies under authority given it by the peace treaty with Italy.

During 1949 the activities of the general assembly made it clear that it could exercise real powers.

The capacity of the United Nations and the specialized agencies to request advisory opinions of the International Court of Justice gave these organizations a practical status before the court. Jurists suggested that it might be advisable to open the court to contentious litigation by these international organizations although that step had not yet been taken.

The trend of opinion, practice and authoritative decisions was to augment the status and power of international organizations, thus qualifying the status of states. Appreciation that this legal position had not always been acquiesced in by members of the United Nations motivated a resolution in the general assembly in December 1949 by a vote of 53 to 5 affirming the obligations of the charter and calling upon the members to co-operate in full with the United Nations organs, to exercise restraint in the use of the veto, and to co-operate to attain regulation of conventional armaments and "to agree to the exercise of national sovereignty jointly with other nations to the extent necessary to attain international control of atomic energy." A further strengthening of the United Nations could be found in the assembly resolution recognizing the competence of the secretary-general to recruit a field service and a panel of observers to aid missions in disturbed areas.

Regional Arrangements.—Opinions varied concerning the status of regional arrangements for collective self-defense, although the permissibility of such arrangements under article 51 of the United Nations charter was generally acknowledged. The western powers had generally favoured the inter-American arrangement established by the Rio de Janeiro convention of 1947 and the western European arrangement established by the Brussels convention of 1948. On the other hand, these powers had been less enthusiastic about the Arab league established in 1944 and had generally opposed the one-sided arrangements concluded by the Soviet Union with its satellites in eastern Europe. The North Atlantic pact concluded in April 1949 was criticized on the political ground that it tended to widen the gap between the west and the soviets and tended to reduce the security of Asiatic states, and on the juristic grounds that it provided no impartial procedure or clear criteria for determining the aggressor, and no workable procedure of review to determine whether a decision on this point, made by the parties, was just. Even the majority of western commentators who supported the North Atlantic pact tended to look upon it as an unwelcome necessity forced by the excessive use of the veto in the United Nations and the evidence of soviet aggressive intent toward western Europe.

States.—Under instructions from the general assembly, the International Law commission of the United Nations approved, by a vote of 11 to 2 (the U.S. and soviet representatives joining in the dissent), a Draft Declaration on the Rights and Duties of States originally proposed by Panamá. The general assembly voted in November to transmit this document to the members for comment. The instrument was subject to much unofficial criticism by jurists from the point of view both of form and of content, though it commanded considerable support. It constituted an effort to state the basic principles of international law in brief paragraphs similar to instruments approved by the American states in the past.

Many traditional problems of international law were dealt with judicially during the year. The Kasenkina case, concerning the soviet employee who jumped out of a second-story window to escape soviet pressures, raised questions of consular immunities. The immunities of national representatives to the United Nations in the U.S. were raised in a case involving speeding by the Chilean representative. U.S. courts held that Valentin Gubitchev, an employee of the United Nations and allegedly still attached to the soviet embassy, was not immune from prosecution on charges of espionage with Judith Coplon in the United States. British courts refused to extradite Gerhard Eisler, a Communist found guilty of contempt of congress for refusing to testify before the committee on Un-American activities partly on the ground that the offense was political.

The trend toward judicial acceptance of executive decisions on matters of immunity, status, privileges, etc., continued in the United States and British courts but was less evident in continental European courts.

The International Court of Justice handed down an opinion on the merits of the Corfu Channel case in April 1949, finding Albania liable for the destruction of British ships by mines in its territorial waters. The court stated the rule of customary international law "that states in time of peace have a right to send their warships through straits used for international navigation between two parts of the high seas without the previous authorization of a coastal state, provided that the passage is *innocent*. Unless otherwise prescribed in an international convention, there is no right for a coastal state to prohibit such passage through straits in time of peace."

The International Law commission began investigating three topics of international law deemed to demand codification—the law of the high seas, of treaties and of arbitral procedure. In connection with the first topic, a whaling convention went into force during the year and several states followed the United States in claiming domain beyond the three-mile limit. By legislation of 1945 the United States had claimed domain in the bottom of the sea as far as the continental shelf. Saudi Arabia claimed six miles, both the bottom of the sea and the sea itself, as had Turkey, Syria and the Lebanon. Most of the Persian Gulf states claimed jurisdiction over the bottom of the Gulf beyond the three-mile limit, and Jamaica and the Bahamas claimed the continental shelf surrounding these islands.

U.S. courts decided that for certain purposes the U.S. bases in Bermuda were "possessions" of the United States, but Okinawa, though occupied by U.S. forces, was not. (*Vermilya-Brown Co.* v. *Connell* 69 S. Ct. 140; *Boer* v. *U.S.* 79 Federal Supplement 405). Great Britain continued its controversy with Chile and Argentina concerning the South Falklands dependency. These countries had refused to arbitrate the title, but had occupied certain islands which they claimed. During the year the western powers recognized the Korean republic (occupying the southern half of Korea) and gave a certain recognition to the German Federal republic including the three western zones of Germany. They retained ultimate power in the Occupation statute, however. Israel was admitted to the United Nations and the general assembly voted in the autumn of 1949 with only five states in opposition to admit nine states to the U.N.—Austria, Ceylon, Finland, Ireland, Italy, Jordan, Korea, Portugal and Nepal. Because of the failure of the Security council, hampered by the soviet veto, to recommend these admissions, the effect of the action was doubtful and an advisory opinion was requested of the International Court of Justice. The Soviet Union had urged that all of these states except Korea and in addition Albania, Bulgaria, Hungary, the Mongolian Peoples Republic and Rumania be admitted simultaneously, but the general assembly rejected the proposal by a vote of 32 to 12

The general assembly in dealing with the former Italian colonies as authorized by the Italian peace treaty decided that Libya should be independent by January 1, 1952, and that Somaliland should be under Italian trusteeship for ten years. It also authorized a commission to go to Eritrea to determine the wishes of the population before June 1950. Division of this area between Ethiopia and the Sudan had been considered.

The general assembly made several decisions in regard to trusteeships and dependent territories. It asked the International Court of Justice to advise on the status of South West Africa, formerly under mandate. It also limited the right of administering authorities to incorporate trusteeship areas in administrative unions with neighbouring territories and decided that the U.N. flag should fly with the flag of the administering authority in trusteeship areas. The assembly also asserted its competence to consider the political development of dependent territories not under trusteeship. These positions were criticized by some of the administering authorities. The general assembly recommended that Jerusalem be internationalized under the United Nations, over the opposition of both Israel and Jordan actual occupation of the city. (*See* TRUST TERRITORIES.)

Individuals.—This topic had become one of the most contro-ersial in contemporary international law. The international law urnals were full of discussions of human rights and inter-tional crimes during the year. In the United States the Uni-rsal Declaration of Human Rights and the genocide conven-on, both approved by the general assembly in 1948 and the tter submitted to the states for ratification, were criticized by e American Bar association. They were vigorously supported the department of state and given wide publicity by the nited Nations and U.N.E.S.C.O. A few states had ratified e genocide convention.

The Human Rights commission of the United Nations pro-uced a Draft Covenant of Human Rights. This instrument ould create legal obligations for ratifying states to observe rtain of the rights asserted in the universal declaration and ould be implemented by committees competent to investigate d give publicity to violations of the covenant. The covenant as to be considered further by the Human Rights commission its meeting in 1950. The general assembly failed to take tion on the proposed Freedom of Information convention. It d, however, consider the alleged violation of human rights in ungary, Bulgaria and Rumania and asked the International ourt of Justice for an advisory opinion on the obligation of ese states to co-operate in the procedure for the protection human rights set up in the peace treaties. These states had leged that the matter was within their domestic jurisdiction.

The International Law commission had on its agenda the awing up of a code on war crimes and other offenses against ternational security along the lines of the Nuernberg charter, d the establishment of an International Criminal Court. The cretariat had prepared a "Historical Survey of the Question of ternational Criminal Jurisdiction" and committees were set to study the matter, but no final action was taken.

While the process of providing international protection for man rights and international punishment for crimes against e law of nations was not likely to achieve positive results for number of years, progress was made during the year 1949. pinion apparently gave increased acceptance to the idea that dividuals are subjects of international law. (*See* WAR CRIMES.)

Methods of Pacific Settlement.—The Interim committee of e general assembly concerned itself particularly with the study methods of pacific settlement in order to carry out the re-onsibility of the general assembly to "initiate studies and ake recommendations for the purpose of promoting interna-nal cooperation in the political field" (article 13). The secre-riat provided the Interim committee with elaborate mem-anda tracing the history of methods of political settlement nce 1920. One result achieved was reinstatement of the Geneva eneral act of 1928 negotiated under auspices of the League Nations. A plan for panels for conciliation and inquiry was so perfected.

So long as the community of nations relied largely on co-eration among its members, with imperfect means of law en-rcement by central authority upon either states or individuals, ocedures of pacific settlement available for voluntary use by ates would be of major importance in international law. The rk of the Interim committee gave renewed emphasis to this pect of international relations developed particularly by the gue conventions of 1899 and 1907.

Status of War.—The Kellogg-Briand pact, the United Na-ns charter, the Nuernberg charter, and the Nuernberg and her war-crimes judgments had made it clear that war, as a ndition during which two or more states were equally free to ilize armed force to solve their controversies, had been out-wed. Under these instruments, as interpreted by governments and international tribunals, governments engaged in hostilities must be either lawful defenders, unlawful aggressors, or governments lawfully exercising domestic jurisdiction or participating in international sanctions. They could not be belligerents in the traditional sense. Nevertheless, hostilities might occur and, whatever the name, would acquire regulation. There was considerable discussion of the "law of war" during 1949. Proposals were made to distinguish "hostile occupation" carried on after unconditional surrender of an enemy, "pacific occupation" carried on in an allied country during hostilities, and "peaceful occupation" carried on in time of peace from "belligerent occupation" carried on in enemy country during hostilities. The prevalence of these varied types of occupation rendered the subject important. Regulation of aerial bombardments, submarine warfare and the taking of hostages was urged. Improvement in the 1929 convention for the treatment of prisoners of war was also considered necessary.

Some writers doubted whether much was to be gained from efforts to revise the laws of war under existing conditions of totalitarian war, but others considered the effort worthwhile. The numerous war-crimes trials had stabilized much of this branch of international law, among other things establishing the illegality of killing hostages. The U.N. War Crimes commission completed publication of 15 vol. of reports of war crimes trials and a history summarizing its activities. These materials together with the publication of the original Nuernberg trial with documents in 42 vol. and the projected publication of the later Nuernberg trials by the department of the army of the United States provided a significant documentation in this field. (*See* also CIVIL LIBERTIES; INTERNATIONAL COURT OF JUSTICE; UNITED NATIONS.) (Q. W.)

International Monetary Fund.

The principal spheres of activity of the International Monetary fund during 1949 related to establishment and revision of par values and exchange rates, exchange transactions, exchange restrictions, multiple currency practices, gold policy and admission of new members. As in the past, the fund provided the machinery for continuous international consultation and co-operation on these varied problems.

With the admission of Thailand the membership of the fund increased to 48 members. Thailand's quota in the fund was established at $12,500,000, bringing the total aggregate quotas up to $8,046,500,000, compared with $8,034,000,000 on Dec. 31, 1948, and $7,921,500,000 as of Dec. 31, 1947.

The use of the fund's resources continued to be governed by the same general policies as in previous years. Exchange transactions with members were submitted to the tests of the various criteria set forth in the fund's Articles of Agreement. As a general rule, countries receiving assistance from the Economic Cooperation administration could request the purchase of U.S. dollars from the fund only in exceptional or unforeseen cases. The following table summarizes the fund's exchange transactions during the year 1949.

Exchange Transactions of the International Monetary Fund, 1949

Country	Sales of U.S. dollars
Brazil	37,500,000
India	31,680,000
Australia	20,000,000
Yugoslavia	9,000,000
Egypt	3,000,000
Ethiopia	300,000

In addition, the fund sold $6,136,000 of U.S. dollars against gold. An important development for the fund was the beginning of transactions in which member countries of the fund repurchased some of their own currencies with gold and U.S. dollars.

The first country to engage in such a transaction was Costa Rica, which, in May, repurchased the equivalent of $874,000 in its own currency from the fund. In subsequent months, similar transactions were carried through by Belgium, Nicaragua and Costa Rica. As of Nov. 30, 1949, the fund held the equivalent of $1,450,563,000 in gold, plus $5,353,629,000 in currencies of member countries, of which $1,289,336,000 represented U.S. dollars.

The year 1949 saw many changes in the par values of member countries. In addition to the establishment of an initial par value for the Yugoslav dinar in May and a new par value for the Mexican peso in June, in September there took place a series of changes in the par values of a number of member countries, beginning on Sept. 18, when the United Kingdom proposed and the fund concurred in the change of the par value of sterling. Within a few days 13 member countries, not including their nonmetropolitan areas, changed their par values. The new par values are given in the following table:

Country	Currency	Date established	U.S. cents per currency unit
Yugoslavia	Dinar	May 24, 1949	2.0000
Mexico	Peso	June 17, 1949	11.5607
United Kingdom	Pound	Sept. 18, 1949	280.000
Australia	Pound	Sept. 18, 1949	224.000
Union of South Africa	Pound	Sept. 18, 1949	280.000
Norway	Krone	Sept. 18, 1949	14.000
Denmark	Krone	Sept. 18, 1949	14.4778
Egypt	Pound	Sept. 18, 1949	287.156
Canada	Dollar	Sept. 19, 1949	90.9091
Iraq	Dinar	Sept. 20, 1949	280.000
Netherlands	Guilder	Sept. 20, 1949	26.3158
Iceland	Króna	Sept. 21, 1949	10.7054
India	Rupee	Sept. 22, 1949	21.0000
Belgium	Franc	Sept. 22, 1949	2.0000
Luxembourg	Franc	Sept. 23, 1949	2.0000

As of the end of 1949, the member countries which had not yet established par values with the fund because it was felt that their domestic conditions did not warrant their adoption were Austria, China, Finland, Greece, Italy, Poland and Uruguay. Thailand, which as stated above had joined the fund during the year, also had not established a par value. In addition, France continued as in 1948 not to have a par value agreed with the fund.

In addition to the establishment of new par values and changes in established par values, a number of member countries in consultation with the fund took important steps to change their exchange rates or their existing systems. These changes did not, however, involve changes in par values. Among the countries which made such changes were Austria, Finland, France, Greece, Peru, Paraguay and Uruguay. These changes usually involved considerable simplification of the exchange rate structure. In France, the new system established uniform exchange rates for all transactions in every currency; however, this rate was not fixed, but would vary in accordance with the rate quoted from time to time on the Paris free market.

During 1949, questions relating to external sales of gold at premium prices and gold subsidies were a matter of discussion with a number of member countries; *e.g.*, Belgium, Canada, Southern Rhodesia and the Union of South Africa. The fund reviewed and decided to maintain its previous policy with regard to external transactions in gold at premium prices.

The fourth annual meeting of the board of governors of the International Monetary fund was held in Washington, D.C., in September. At this meeting the governors considered a proposal of the Union of South Africa to permit, under specified conditions, the sale, by the government of any member, of newly mined gold in any market at such premium prices as might be ruling in that market. After discussion it was agreed that this resolution be referred to the executive directors of the fund for a study of the relevant considerations and report to the board of governors.

At this conference, it was decided to admit Haiti to membership in the fund, with a quota of $2,000,000 and to extend the period in which Liberia might accept membership in the fund.

The activities of the fund involved continuous consultation and advising with member governments, and the maintenance of close contacts with the other international agencies. The fund worked together with a number of these agencies in connection with Pres. Harry S. Truman's Point Four proposal. (*See* also Banking; Exchange Control and Exchange Rates; International Trade.) (A. N. O.)

International Red Cross: *see* Red Cross.
International Refugee Organization: *see* Refugees.

International Trade.

Preliminary figures for the first nine months of 1949 indicated an increase in the value and the volume of international trade, at an annual rate above that of 1948, and a decline in world export prices. However, the imbalance in the trade of the rest of the world with the United States and the shortage of dollar exchange remained cause for common concern. Although increased effort was exerted by the rest of the world to reduce the high degree of dependence on purchases from the United States, declining exports to the United States and increased imports from that source resulted in trade deficits in the first and second quarters of the year which were larger than the deficit during any quarter in 1948, but considerable improvement took place in the unbalanced situation in the third and fourth quarters.

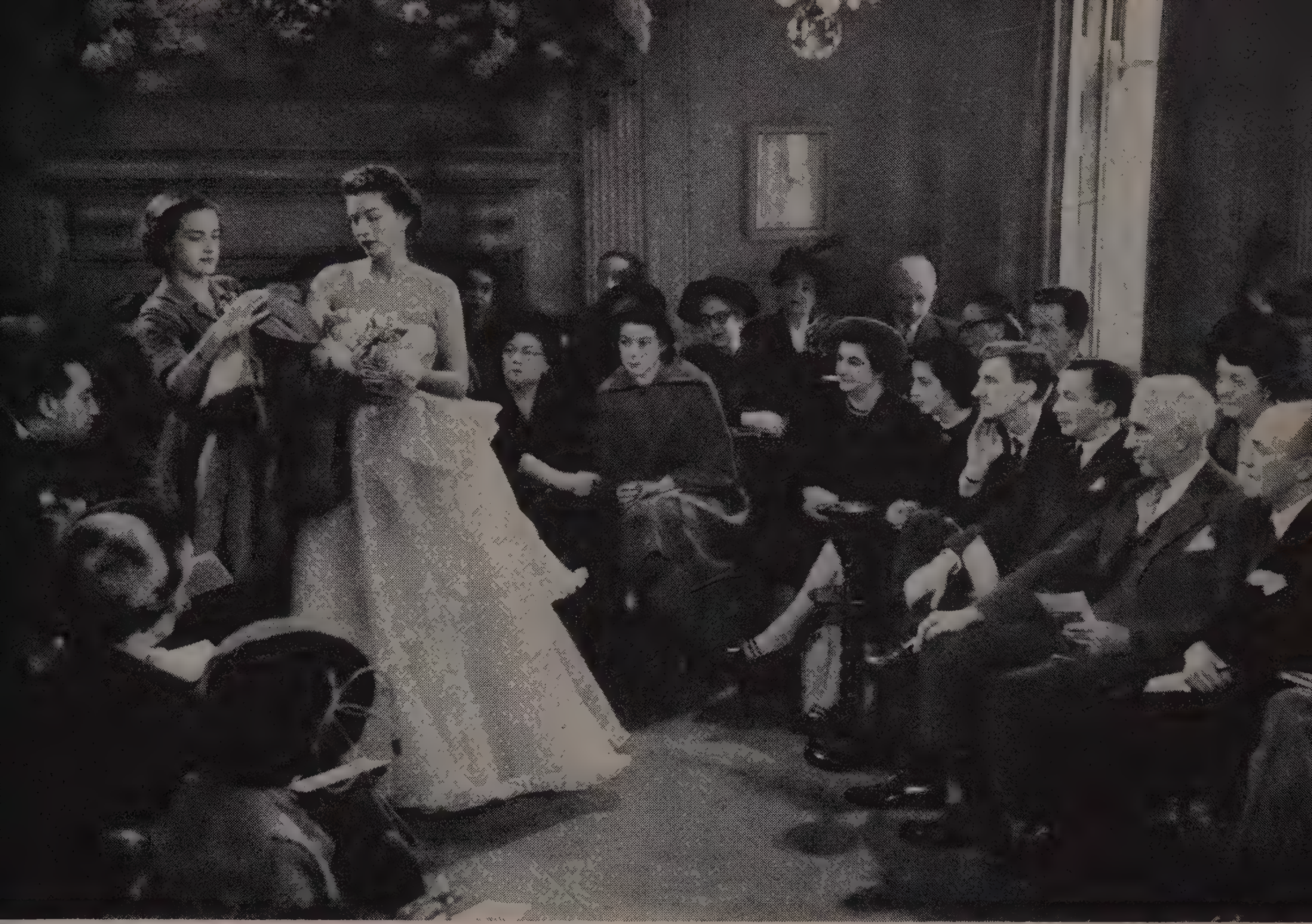
Import and exchange controls were universally maintained in 1949, and many countries intensified their controls, limiting dollar imports to goods of the highest essentiality, and attempted to divert their purchases as far as possible from hard currency to soft currency areas. Declining currency reserves were halted by a wave of currency devaluations beginning with devaluation of the pound sterling on Sept. 18, which carried with it devaluation of the currencies of the rest of the sterling area (except Pakistan). This change was followed by a general realignment of most European and several Latin American currencies. (*See* Exchange Controls and Exchange Rates.)

The stringent world dollar exchange situation was partially alleviated by continued loans and grants. A large part of goods moving in international trade channels continued to be financed in that manner.

Many countries sought to overcome the principal obstacle to trade—currency inconvertibility—by resorting increasingly to bilateral agreements and barter arrangements.

Although increased restrictions on imports were characteristic of the period, the effort to lower tariffs and other trade barriers was continued. At the Annecy conference ten countries seeking accession to the General Agreement on Tariffs an Trade negotiated with each other and with the original contracting parties to the general agreement. The results of the negotiations were contained in the Annecy Protocol of Terms of Accession to the General Agreement on Tariffs and Trade, which was opened on Oct. 10, 1949, at the headquarters of the United Nations for signature by the 33 countries concerned. (*Se* Tariffs.)

United States.—Exports from the United States, although still large in 1949, showed a decline for the second consecutive year. After increasing in the first two quarters, largely because of expanded trade with countries participating in the European Recovery program, over the last two quarters of 1948, they declined sharply in the third quarter, somewhat further in the fourth quarter, and showed a drop of about 6% in total value for the year. An estimate on the basis of January–November data placed the year's total exports at $11,900,000,000, com



RITISH FASHION SHOWING of 1949 model clothes before an audience of verseas buyers. In the spring shows London designers had considerable success extending their export market beyond woollens and tweeds to include vening dresses

ared with $15,340,000,000 in 1947 and $12,650,000,000 in 1948.

The decline from 1948 was largely the result of the downard trend in commodity prices beginning late in 1948 and connuing in 1949. In terms of quantity (which as here used refers the value figure adjusted for changes in the price level), the otal export trade for 1949 was approximately as large as in 948, although in the final quarter of the year it showed a derease of about 10% from the 1948 quarterly average.

Imports into the United States decreased in the first three uarters of the year and despite a marked upswing in the final quarter showed a decline for the year of approximately 7% from 1948. Total imports for 1949 were estimated at $6,600,000,000, compared with $5,756,000,000 in 1947 and $7,124,000,000 in 1948. Although the lower level of prices accounted partly for the drop in value from 1948, the quantity of imports also showed some reduction.

The downward trend in exports and the rise in imports after

Table I.—*Geographic Distribution of United States Foreign Trade*

Country or area	Value (in millions of dollars)			Per cent of total		
	1936–38 9-months average	Jan.-Sept. 1948	1949	1936–38 9-months average	Jan.-Sept. 1948	1949
ports* to						
Western hemisphere	754.8	3,955.5	3,758.5	33.9	41.7	40.1
Canada	340.3	1,402.7	1,502.7	15.3	14.8	16.0
Latin American republics	363.5	2,382.7	2,097.5	16.3	25.1	22.4
Other western hemisphere	51.0	170.1	158.3	2.3	1.8	1.7
Europe	932.1	3,239.5	3,221.3	41.9	34.1	34.4
United Kingdom	374.4	487.8	546.8	16.8	5.1	5.8
Other Europe	557.7	2,751.7	2,674.5	25.1	29.0	28.6
Asia	373.9	1,588.9	1,740.9	16.8	16.8	18.6
Oceania	67.9	105.3	150.6	3.1	1.1	1.6
Africa	96.2	599.1	492.5	4.3	6.3	5.3
Total	2,224.9	9,488.3	9,363.8	100.0	100.0	100.0
ERP countries†	846.5	3,165.0	3,185.6	38.0	33.4	34.0
Sterling area	628.5	1,467.0	1,478.5	28.2	15.5	15.8
ports‡ from						
Western hemisphere	693.9	3,013.1	2,914.0	37.1	57.3	59.8
Canada	258.6	1,092.4	1,080.0	13.8	20.8	22.2
Latin American republics	406.8	1,776.6	1,706.1	21.8	33.8	35.0
Other western hemisphere	28.5	144.1	127.9	1.5	2.7	2.6
Europe	532.0	818.8	674.9	28.5	15.6	13.9
United Kingdom	130.3	213.3	163.9	7.0	4.1	3.4
Other Europe	401.7	605.5	511.0	21.5	11.5	10.5
Asia	561.1	979.5	937.0	30.1	18.7	19.2
Oceania	30.1	129.7	94.7	1.6	2.5	2.0
Africa	49.6	308.3	249.0	2.7	5.9	5.1
Total	1,866.7	5,249.4	4,869.5	100.0	100.0	100.0
ERP countries†	454.9	697.3	614.9	24.4	13.3	12.6
Sterling area	573.8	1,040.3	857.8	30.7	19.8	17.6

*Including re-exports.
†Metropolitan territories.
‡General imports.

Table II.—*Value of Principal Commodities in United States Foreign Trade*
(In millions of dollars)

Commodity	1936–38 9-months average	January-September 1948	1949
Exports*			
Agricultural exports, total	583.6	2,521.5	2,756.4
Meat products and edible fats	32.5	96.3	114.5
Dairy products and eggs	4.3	185.4	169.9
Wheat, including wheat flour	46.1	1,097.0	823.1
Fruits and vegetables	74.8	218.8	138.5
Tobacco, unmanufactured	106.9	158.1	176.1
Cotton, raw	234.5	293.8	622.3
Nonagricultural exports, total	1,610.1	6,875.4	6,515.2
Rubber manufactures, including synthetics	19.1	98.8	87.9
Textiles and textile manufactures	65.4	633.8	512.3
Coal	42.1	369.8	256.2
Petroleum and products	258.2	506.1	442.9
Iron and steel-mill products	149.0	492.3	619.3
Machinery	330.0	1,747.5	1,797.1
Automobiles, parts and accessories	214.4	682.0	588.8
Chemicals and related products	96.9	586.6	585.2
Imports†			
Agricultural imports, total	944.6	2,347.7	2,114.8
Hides and skins	38.9	91.3	54.4
Fruits, edible nuts and vegetables	60.5	162.5	150.0
Coffee	105.6	495.7	546.5
Cane sugar	113.6	251.2	312.8
Crude rubber	133.9	220.7	179.5
Vegetable oils (expressed) and oilseeds	‡	177.6	111.1
Tobacco, unmanufactured	24.5	59.2	57.2
Wool, unmanufactured	43.1	252.8	151.6
Raw silk	74.4	11.1	6.8
Nonagricultural imports, total	901.3	2,873.6	2,735.4
Fish, including shellfish	23.1	80.0	82.0
Undressed furs	48.8	126.1	78.5
Burlaps	26.2	97.8	76.6
Paper and paper materials	165.8	568.0	487.4
Petroleum and products	31.2	295.9	339.4
Diamonds, gems, cut, not set	17.3	44.0	29.2
Nonferrous ores and metals	133.5	539.5	651.0
Chemicals and related products	65.1	87.0	80.2

*United States merchandise.
†Imports for consumption.
‡Not available.

the middle of 1949 narrowed the gap between exports and imports to approximately $800,000,000 in the fourth quarter, the smallest quarterly export balance since before World War II. At an annual rate, this quarterly balance amounted to $3,200,000,000, compared with export balances of $9,600,000,000 in 1947, $5,500,000,000 in 1948 and an annual rate of $6,000,000,000 in the first nine months of 1949.

Canada.—Canadian foreign trade continued at a high level during the first nine months of 1949 with exports valued at $2,146,000,000 and imports valued at $2,073,900,000. Exports were $12,200,000 less than during the corresponding period in 1948, while imports were $150,600,000 greater, reaching a level higher than had ever been attained for a similar period. The volume of both imports and exports (*i.e.*, value with the price factor eliminated) was far greater than before World War II. For 1948 the import volume index (1938=100) was 181; the export volume index, 173.

Exports of Canadian merchandise to the United Kingdom were $9,800,000 greater than during the first nine months of 1948, and imports from that country were $23,400,000 greater. The export balance (taking into account re-exports) in the trade with the United Kingdom dropped from $389,200,000 to $288,400,000. In the trade with the United States, comparing the same periods, exports to the United States decreased by $16,600,000 and imports increased by $147,900,000 despite continued exercise of comprehensive import controls. The import deficit in the trade with the United States for Jan.–Sept. 1949 amounted to $431,700,000, $169,000,000 greater than the deficit for the corresponding period in 1948, but $286,500,000 less than the deficit during the nine months period in 1947.

Table III.—*Geographic Distribution of Canadian Foreign Trade**

Country or area	January-September Value (in millions of Canadian dollars) 1938	 1948	 1949	 Per cent of total 1938	 1948	 1949
Imports† from						
United Kingdom	89.6	217.3	240.7	17.7	11.3	11.6
Other commonwealth countries‡	48.6	146.2	139.6	9.6	7.6	6.7
United States (continental)	319.4	1,322.7	1,470.6	63.1	68.7	70.9
Latin American republics	12.0	167.3	135.2	2.4	8.7	6.5
Europe (except British)	28.7	43.3	63.5	5.7	2.3	3.1
Other countries	7.7	26.5	24.3	1.5	1.4	1.2
Total	506.0	1,923.3	2,073.9	100.0	100.0	100.0
Sterling area	136.5	356.9	379.8	27.0	18.6	18.3
Exports§ to						
United Kingdom	242.4	516.2	526.0	40.8	23.9	24.5
Other commonwealth countries‡	77.2	231.3	243.5	13.0	10.7	11.3
United States (continental)	189.3	1,040.9	1,024.3	31.8	48.3	47.8
Latin American republics	12.9	88.1	92.4	2.2	4.1	4.3
Europe (except British)	50.7	222.5	172.1	8.5	10.3	8.0
Other countries	22.0	59.2	87.7	3.7	2.7	4.1
Total	594.5	2,158.2	2,146.0	100.0	100.0	100.0
Sterling area	313.7	707.6	761.5	52.8	32.8	35.5

*Excluding gold.
†Imports for consumption.
‡Includes trade with Newfoundland through March 1949. (Newfoundland became the tenth province of Canada on April 1, 1949.)
§Domestic exports.

In spite of increased imports from the United States during 1949, Canadian gold and dollar reserves to the end of September had been held at about the level recorded for the end of 1948—$985,300,000, compared with $997,800,000. The important factor was the expenditure of Marshall plan dollars by European Recovery program countries for off-shore purchasing in Canada. About $450,000,000 in payments was reported in this connection in 1948; more than $300,000,000 in such payments was anticipated for 1949.

Latin America.—Available statistics indicated a decrease in foreign trade of the Latin American republics in 1949 from the record levels attained in 1947 and 1948. However, the 1949 trade was still at a high level compared with prewar years. The lower value of imports in 1949 showed the effects of intensified import and exchange controls. The heavy import demand characteristic of the postwar period continued, but, because of the shortage of gold and dollar exchange reserves, most Latin American countries limited dollar imports to the most essential commodities.

United States statistics showed a drop of 12% in United States exports to the Latin American republics in the first nine months of 1949, compared with the corresponding period in 1948. Many Latin American countries confined their purchases from the United States to current receipts of dollar exchange, derived mainly from exports to the United States.

Table IV.—*Foreign Trade of Selected Latin American Republics*

(In millions of U.S. dollars)

Country	Total trade 1947	 1948	 1949 Jan.-June	Per cent to or from United States 1947	 1948	 1949 Jan.-June
Imports into						
Argentina	1,307.7	740.9*	†	45.5	47.4*	†
Brazil	1,216.9	1,120.6	467.5‡	61.3	51.8	50.1‡
Chile	270.0	269.2	143.2	43.6	42.5	56.2
Colombia	363.8	92.7§	†	72.3	74.0§	†
Cuba	519.9	527.5	242.6	83.9	79.7	82.9
Mexico	665.4	528.7	256.2	88.4	86.1	87.6
Peru	168.0	167.7	†	58.3	54.1	†
Uruguay	215.1	200.4	87.1	38.3	33.7	23.7
Venezuela	552.1	687.6	†	†	72.9	†
Exports from						
Argentina	1,639.4	938.8*	†	9.9	9.1*	†
Brazil	1,145.8	1,173.8	358.5‡	38.8	43.3	49.6‡
Chile	280.0	329.9	175.6	44.5	52.9	54.3
Colombia	254.3	62.4§	†	84.4	85.3§	†
Cuba	746.6	709.9	280.9	66.7	51.6	74.2
Mexico	443.1	478.1	240.8	77.0	74.5	75.7
Peru	154.3	162.4	†	29.3	24.6	†
Uruguay	162.5	179.0	91.8	28.6	28.5	19.3
Venezuela	734.1	1,036.1	†	†	†	†

*January-June. †Not available. ‡January-May. §January-March.

Imports from Europe increased notably in the case of Latin American countries having large export markets in Europe. Trade with Europe was facilitated by a growing number of bilateral agreements, barter transactions and compensation agreements entered into to overcome difficulties caused by inconvertibility of currencies.

Countries which altered their exchange rates subsequent to the devaluation of the pound sterling included Argentina, Uruguay, Paraguay, Peru, Bolivia, Ecuador and British Honduras.

United Kingdom.—The value of the merchandise trade of the United Kingdom continued to reach record levels in the first nine months of 1949. Exports totalled £1,315,000,000, compared with £1,150,000,000 in 1948 for the January–September period. Imports showed an 8% rise in value over 1948, reaching £1,680,000,000 for the nine months of 1949. The volume of exports for the January–September period of 1949 averaged 48% above the 1938 level. This compared with an average volume of 36% above prewar for 1948 and 9% above prewar for 1947. Retained imports were still being held below the 1938 volume, though they were greater than in any postwar year. For the first nine months of 1949 they averaged 87% of the level for 1938. In the year 1948 imports were 81% of the prewar level.

Table V.—*Value of Trade of the United Kingdom with Principal Countries*

(In millions of pounds sterling)

Country	January-September Imports* 1947	 1948	 1949	 Exports† 1947	 1948	 194
Argentina	98.2	88.1	46.7	25.3	33.5	35
Australia	68.5	115.7	157.4	49.5	107.6	133
Belgium	23.5	28.3	30.2	23.2	28.5	25
British West Africa	41.8	59.7	73.2	18.5	32.9	46
Canada	173.8	166.4	156.6	30.2	50.3	57
Ceylon	15.4	21.2	20.1	8.6	9.4	10
Denmark	23.0	33.2	57.5	19.6	19.3	34
Egypt	13.6	33.4	26.4	18.0	26.2	27
France	23.7	31.9	54.5	16.5	26.8	24
India, Pakistan, etc.	66.3	78.3	80.1	68.1	77.6	123
Ireland	23.7	28.5	39.3	37.7	56.4	55
Netherlands	18.2	31.3	48.5	21.9	31.9	38
Netherlands West Indies	23.4	48.2	30.3	1.9	1.9	1
New Zealand	72.4	87.7	96.1	28.7	37.4	44
Norway	10.7	12.9	16.7	21.6	21.4	30
Sweden	28.7	37.0	45.8	22.3	41.0	33
Union of South Africa	17.8	24.1	24.6	67.3	87.7	106
United States	228.7	142.9	163.0	34.2	49.4	37
Other countries	366.9	481.2	514.3	304.1	411.6	447
Total	1,338.3	1,550.0	1,681.3	817.2	1,150.8	1,315

*General imports.
†United Kingdom produce.

The trade deficit with the United States which had narrowed couragingly in 1948 widened again in the first nine months of 49 when imports tended to rise and exports fell off sharply. is situation, together with a worsening of the dollar position the other sterling area countries and a drawing down of the rling area gold and dollar reserves, caused a financial crisis ich led to devaluation of the pound sterling in Sept. 1949.

About 50% of Britain's exports went to the sterling area untries in the first nine months of 1949, compared with 42% 1938. The dollar area (United States, Canada and "Amer-n Account" countries) received about 9% in 1949, but took % in 1938.

Europe.—The total value of imports into ERP countries ring January–June 1949 amounted to $13,100,000,000, an in-ease of 5% over the 1948 half year average; the value of ex-rts from the ERP countries during the same period amounted $9,900,000,000, 16% above the 1948 half-year average. The pansion in exports further narrowed the export-import gap. e trade deficit for the six months was at an annual rate of ,300,000,000, compared with a deficit of $7,500,000,000 in 48. The 1949 trade deficit in terms of real prices was com-rable with the 1938 deficit, and the ratio of exports to im-rts was 76% compared with 75% in 1938. The export-import io in 1948 was 69%, and in 1947 it was 58%.

The heavy dependence of ERP countries upon the United ates as a source of imports showed no indication of decline the group as a whole during the first six months of 1949 mpared with the previous year. Of total imports into ERP untries during the half year period in 1949, 18.4% came from e United States, compared with 18.2% in 1948. The situation came all the more difficult because of the falling off in ex-rts to the United States during the first half of 1949, and the de deficit with the United States grew progressively larger.

To relieve the dollar shortage and sustain imports into ERP untries of essential supplies, the United States continued in 49 to render financial aid to those countries. That aid, through e system of drawing rights, also enabled an increase in trade nong the countries participating in the program.

The trend of European trade in 1948 and the first half of 49 indicated a rise in volume of trade within Europe as well with the outside world. Imports into ERP countries from stern Europe in the first half of 1949 remained at about the 48 level, but exports to eastern Europe increased, bringing the de between the two groups of countries more nearly into lance.

In the fall of 1949 a systematic attempt was made to deal th the problem of intra-European trade restrictions. At the commendation of the O.E.E.C. (Organization for European onomic Cooperation) council in Paris, each participating untry removed quantitative restrictions from a substantial rtion of its import trade originating in member countries. Licences for commodities for which quantitative restrictions were removed were to be either abolished or granted automatically. This development was expected to gain momentum in the early months of 1950. (*See* also EUROPEAN RECOVERY PROGRAM; ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION.)

Table VI.—*Percentage Distribution of Foreign Trade of Metropolitan ERP Countries*

Country or area	1938	1947	1948*	1949* Jan.-June
orts				
ource (percentages)				
United States	11.0	26.4	18.2	18.4
Canada	3.9	5.6	4.6	3.8
Other western hemisphere	9.9	12.1	12.0	8.3
ERP countries	38.7	29.4	31.8	34.0
Eastern Europe	10.4	4.2	5.4	5.0
All other countries	26.1	22.3	28.0	30.5
Total	100.0	100.0	100.0	100.0
alue (in millions of U.S. dollars)	12,539.3	21,747.7	24,502.1	13,053.3
orts				
estination (percentages)				
United States	5.1	5.4	5.5	3.9
Canada	1.6	1.7	2.0	2.1
Other western hemisphere	7.7	8.2	8.3	7.2
ERP countries	51.2	45.8	45.0	45.0
Eastern Europe	10.5	5.8	5.5	5.7
All other countries	23.9	33.1	33.7	36.1
Total	100.0	100.0	100.0	100.0
alue (in millions of U.S. dollars)	9,358.0	12,770.1	16,952.5	9,879.3

Preliminary data.

CHINAWARE BY ROSENTHAL on display in New York city at the U.S. military government exhibit of the wares of 511 west German manufacturers. This first U.S. showing of German goods after World War II opened April 9, 1949

Near East.—In the near east the foreign trade of most countries remained at high levels during 1949. Egyptian trade was greater in the first half of the year than during the first half of 1948. The foreign trade of Turkey was brought more nearly into balance, largely as a result of an increase in exports. Israel's trade showed some expansion, but commercial activity with neighbouring countries was still restricted. The foreign trade of Lebanon and Syria continued at a low level. Iraq's exports and imports were less than in 1948, and strict control was exercised over imports to hold down the adverse balance. Iran's trade position improved as a result of increased exports in the early part of the year.

Southern Asia.—While the foreign trade of southern Asia (India, Pakistan and Ceylon) was at a very high level during the fiscal year 1948–49, being about one-fifth more than in the previous year, a sharp drop occurred in the fiscal year 1949–50. The official import trade (sea-borne) of India during the year 1948–49 amounted to $1,563,000,000, while exports were valued at $1,254,000,000, resulting in an import balance of $309,000,000. Pakistan also had an import balance (sea-borne trade) of $72,000,000, as imports were reported to be $330,000,000 and exports $258,000,000. Those figures, covering only sea-borne trade, do not reflect the over-all trade between the two countries. It was estimated that more than three-quarters of India's imports from Pakistan and about 40% of India's exports to Pakistan were by land trade rather than sea-borne.

The trade impasse between India and Pakistan was brought to a crisis in September when the Indian rupee was devalued, while the value of the Pakistan rupee was retained. Disparity between the two currencies resulted in virtual cessation of trade between the two countries.

During the first nine months of 1949 imports into Ceylon totalled $237,000,000 while exports from Ceylon totalled $229,000,000, and the import balance amounted to $8,000,000.

Far East.—In the far east, civil wars, inflation and a shortage of hard-currency exchange continued to interfere seriously with foreign trade. Throughout the area strict controls were maintained over imports from hard-currency countries. Aid given by the United States to the Philippines, China, Japan and Korea helped to relieve the dollar shortage in those countries. The steady southward advance of hostilities in China during 1949 accelerated the deterioration of that country's foreign trade. Civil strife in Burma, Indo-China and Indonesia likewise interfered with production of rice, rubber, copra, coal, sugar and other exportable commodities upon which those countries depend for foreign exchange.

The foreign trade of Thailand showed some expansion in 1949 over the previous year. Rice exports almost reached prewar levels, and rubber exports exceeded prewar quantities.

Malaya, principal dollar earner of the sterling area, experienced a trade deficit in 1949 which exceeded that of 1948. Imports increased, while exports of tea and rubber declined.

The volume of Japan's foreign trade in 1949 increased over that in 1948, but the adverse trade balance was only slightly less than in the preceding year. On April 25, 1949, a single rate was established for the Japanese yen.

The heavy imbalance which characterized Philippine foreign trade after World War II did not appear to have diminished in 1949. Imports declined by about 6% in value, and exports declined by about 17% from the peak year 1948. Measures were taken, effective Jan. 1, 1949, to curb imports of nonessentials.

Australia and New Zealand.—During the fiscal year ended June 30, 1949, exports from Australia amounted to £*A*547,000,000, 33% greater than the value of exports during the fiscal year ended June 30, 1948; imports into Australia during the same period amounted to £*A*415,000,000, 22% greater than the value of imports during the preceding year. Greatest increases occurred in exports to the United Kingdom, Italy, France and the U.S.S.R. and in imports from the United Kingdom, Indonesia and Sweden. Exports to the United States declined from £*A*35,000,000 to £*A*32,300,000; imports from the United States dropped from £*A*66,800,000 to £*A*41,500,000.

Wool, wheat, and flour represented 60% by value of total exports from Australia in 1948–49. The value of wool exports increased from £*A* 149,000,000 in 1947–48 to a new record of £*A* 232,000,000 in 1948–49, and wheat and flour exports rose from £*A* 85,000,000 to £*A* 102,000,000. Australia continued to dispose of most of its export surpluses under long-term contracts with the United Kingdom. Principal exceptions were wool and wheat, wool being sold at auctions and wheat sales being governed largely by the provisions of the International Wheat agreement.

Imports from dollar areas were subjected to more rigid control because of the continued shortage of dollar exchange and were limited to products of high essentiality unobtainable elsewhere. The operation of that policy resulted in a noticeable diversion of imports of a wide range of products from dollar areas to soft-currency countries. Typical examples were motor vehicles and textiles which were obtained in greater proportions from the United Kingdom.

Exports from New Zealand amounted to £*N.Z.*147,800,000 during 1948, compared with £*N.Z.*129,400,000 during 1947. Imports in 1948 valued at £*N.Z.*128,000,000 were at about the same level as in the preceding year. As in the case of Australia, New Zealand's principal export surpluses continued to be sold to the United Kingdom under long-term contracts.

When the pound sterling was devalued, both Australia and New Zealand devalued their currencies.

Union of South Africa.—In 1949 the government of the Union of South Africa took further steps to arrest the continued decline in the country's gold and foreign exchange resources resulting from its trade imbalance.

Prior to 1949 the foreign trade of the Union, reflecting the postwar economic expansion taking place in the country and the virtual absence of governmental trade controls, had maintained a sharp upward trend. Imports, however, were much greater than exports, and gold output and capital inflow were insufficient to finance the large trade deficit, particularly that part with dollar areas. Consequently, the Union had to draw upon its gold and foreign holdings in alarming amounts. Because of the serious situation, the government imposed import controls on Nov. 4, 1948. The controls prohibited the importation of certain specified luxury or nonessential goods from all countries, and in addition, rationed exchange for imports from nonsterling areas. The resulting shift to sterling countries for a greater proportion of purchases, together with a decline in sterling capital inflow, created an additional shortage for the Union, a shortage of sterling. Consequently, in March 1949 the Union government expanded the list of prohibited imports, and, effective from July 1, 1949, extended its import and exchange controls to cover imports from all sources, including sterling countries.

Devaluation of the South African pound in September was expected to further modify the volume and pattern of the Union's trade. (*See* also BUSINESS REVIEW; INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT; INTERNATIONAL MONETARY FUND.)

FILMS OF 1949.—*The Balance* (British Information Services).
(T. C. BL.)

International Trade Organization: *see* TARIFFS.

Interstate Commerce Commission. The commission was created by, and functions under, the Interstate Commerce act, originally enacted Feb. 4, 1887, and later amended and substantially broadened. The act now contains four parts, dealing with railroads and rail facilities, motor carriers, water carriers and freight forwarders. Its jurisdiction is limited to interstate and foreign commerce in so far as transportation occurs within the United States.

A change in the membership of the commission, composed of 11 members, was occasioned by the death of Commissioner George M. Barnard in Jan. 1949. He was succeeded by Commissioner Hugh W. Cross of Illinois. Commissioner Carrol Miller died Dec. 24, 1949. Charles D. Mahaffie served as chairman during 1949. J. Monroe Johnson, who, while a member o the commission, also served as director of the Office of Defense Transportation, was named chairman for the year 1950.

Among the more important activities of the commission during the year 1949 were the following:

Section 5a of the act, approved June 17, 1948, commonly known as the Reed-Bulwinkle act, provides for relief to common carriers and freight forwarders subject to the act from operation of the antitrust laws in respect of procedures for joint consideration of rates, fares and related matters established or continued by agreements which have been approved by the commission. The agreement which was the subject of the first decision under this act was submitted by railroads in the western district generally that part of the United States west of the Mississipp river. It provided for a district organization and various area uborganizations. The commission concluded that the agreement necessary to the continued and proper functioning of an essen-ially competitive rate system, and, subject to certain prescribed onditions, is and will be necessary in the effectuation of the ational transportation policy. The order approving the agree-nent became effective Dec. 15, 1949. Applications covering 13 ther agreements had been filed.

Responsive to petitions by rail carriers for increased rates to eet mounting costs, the commission heard and decided Ex Parte 68, granting an average increase of 13% in freight rates on ommodities generally, with important exceptions. These in-luded a number of key commodities, on some of which the uthorized increases were limited to 8%. These increases, cou-led with the general increases authorized in recent years, had he cumulative effect of increasing freight rates an average of bout 57% above the 1939 level.

A number of requests for increases in passenger fares were onsidered during the year. The most important of these was hat of eastern territory carriers; these carriers were authorized o increase fares 12½%. This had the effect of putting the fares n that territory on a higher level than in other sections of the ountry.

Section 20b of the act, approved in 1948, provides for modi-ications of securities of railroads without the necessity of bank-uptcy proceedings. Under this legislation modifications ap-roved by the commission and assented to by not less than 75% f each class of the securities affected become binding on minor-ty holders. Among the readjustments under that section which vere approved during 1949, the most notable were those of the ehigh Valley Railroad company and of the Central Railroad Company of New Jersey. This statute supplements section 77 of he Bankruptcy act, which the commission, in conjunction with he United States courts, had administered since 1933.

Hearings were commenced in the so-called government repara-ion cases, covering a group of complaints filed in the name of he United States which assailed as unreasonable the rates harged by railroads on wartime traffic. Large amounts of eparation were sought. On completion of the government's resentation in chief and of the carriers' testimony, the hearings vere adjourned until March 1950, for rebuttal by the govern-nent. (C. H. MA.)

ntestinal Disorders: *see* ALIMENTARY SYSTEM, DISORDERS OF.

ntoxication, Alcoholic. Leadership in the educational aspect of the problem of alco-olism continued in the hands of such agencies as Alcoholics Anonymous, the Committee on Alcohol Hygiene and the Na-ional Committee for Education on Alcoholism with its local ommunity affiliated associations. The National Committee was ided by the Yale Plan on Alcoholism, of which it became part. ts work had been augmented by the Summer School of Alcohol Studies, conducted since 1943 by the laboratory of applied hysiology of Yale university, New Haven, Conn. Two separate ut equivalent school sessions were held in 1949, one at Yale nd the other at Trinity university, San Antonio, Tex.

The literature for 1949 re-emphasized that both physiological nd emotional factors are important considerations for evalu-ting the phenomenon and nature of acute intoxication from lcohol and the relationships which the latter bears to the ventual development of habitual drunkenness. Reports con-inued to support the principle that effective application of a rogram for the solution or amelioration of the chronic alcohol roblem must embrace the triad of education, research and reatment. The treatment of alcoholism had become, in large measure, a public responsibility, to be met by providing community clinics, hospital services and other facilities for therapy; the training of personnel to undertake the duties involved; the application of measures for social readjustment of alcoholics; and the maintenance and operation of a commitment centre for intractable alcoholics. During 1949 a public-supported hospital of 50 beds with accommodations for approximately 400 outpatients, to be devoted solely to the study, treatment and rehabilitation of alcoholics, was authorized by the state of Connecticut to be erected at Hartford.

The use of Antabuse for treatment of chronic alcoholism was first reported in Danish medical literature in the late autumn of 1948 and subsequently in English medical literature for 1949. Antabuse (tetraethylthiuram disulphide) had long been known in the chemical industry as ethyl thiurad, an unrefined item of commerce for the rubber industry. For some years it had been observed that industrial workers with this compound tended to develop an intolerance for alcohol.

When administered alone in doses up to 2 g., the substance usually caused no discomfort. When a small quantity of alcohol is consumed at the same time, however, the two substances combine to form acetaldehyde in the body, and with it an attendant unpleasant reaction characterized by increased pulse rate, raised cardiac output and increased pulmonary ventilation and by flushing of the face, sweating, abdominal distress and nausea and vomiting.

These effects are produced within 7 to 12 min. after the ingestion of alcohol, reaching their height in about 30 min. No means of controlling the severity of the reaction had yet been devised in 1949, and its indiscriminate use among alcoholics was not free from danger. Daily doses of the drug alone over a period of several months produced no untoward symptoms or ill effects. Nevertheless, normal persons who ordinarily show little if any effect after the ingestion of 10 to 20 g. of alcohol present circulatory and respiratory symptoms after having taken 1.0 to 1.5 g. of Antabuse on the preceding day.

Experimental studies on the use of myanesin (tolserol) in the management of anxiety, gross tremulous states or "the shakes" following a prolonged alcoholic debauch were reported upon in 1949 to the effect that these symptoms were controlled within 30 min. to 1 hr. after the drug is administered. The drug had heretofore been used as a muscle relaxing agent to alleviate spasticity and rigidity, with variable results.

The use of adrenal cortical extract in the treatment of acute alcoholic states was also reported in 1949. Its use was based upon the premise that the craving for alcohol is to be explained by a series of symptoms similar to hyperinsulism but which leads eventually to those of hypoglycemia. Further observation and study were necessary to substantiate this premise. Inhalation of pure oxygen for the treatment of all problem drinkers including patients with delirium tremens and hallucinosis was also advocated.

The year also witnessed an increased trend in U.S. courts to admit chemical tests for blood alcohol concentration as evidence of alcoholic intoxication among those involved in motor vehicle traffic accidents. (*See* also LIQUORS, ALCOHOLIC.)

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Inventions: *see* ELECTRONICS; MUNITIONS OF WAR; PATENTS; STANDARDS, NATIONAL BUREAU OF.

Investment Banking: *see* BANKING.

Investments, Foreign, in the U.S.: *see* FOREIGN INVESTMENTS.

Iowa. Iowa, popularly known as the "Hawkeye state," was admitted to the union in 1846. Located in the north central region, it comprises 56,280 sq.mi., of which 294 sq.mi. are inland water surface. According to the federal census estimate for July 1, 1949, the population was 2,643,000, an increase of 105,000 over the 1940 census figure. Of this number, 99.3% were white and 94.7% native-born. The capital and largest city is Des Moines, with a 1940 population of 160,000. Other chief cities are Sioux City, 82,364; Davenport, 66,039; Cedar Rapids, 62,120; Waterloo, 51,743; Dubuque, 43,892; and Council Bluffs, 41,439. The state has 90 places classified as urban (towns of more than 2,500 population); 21 of these have populations of more than 10,000.

History.—The elective state officers, all Republicans, in 1949 were: governor, William S. Beardsley; lieutenant-governor, Kenneth A. Evans; secretary of state, Melvin D. Synhorst; attorney general, Robert L. Larson; auditor, Chet B. Akers; treasurer, John M. Grimes; secretary of agriculture, Harry D. Linn; superintendent of public instruction, Jessie M. Parker.

The Iowa general assembly met in biennial session in 1949, convening on Jan. 10 and adjourning on April 20. There were 79 Republicans and 26 Democrats in the house; 43 Republicans and 7 Democrats in the senate. During the session 1,157 bills were introduced, 316 of which were passed. The appropriation bill, providing for the expense of government departments, totalled $8,348,843.50 per year for the next biennium. For payment of the World War II soldiers' bonus, voted on favourably by the people in the 1948 general election, $50,000,000 was appropriated from the state surplus and $35,000,000 in bonds was authorized. A yearly appropriation was also voted for the operation of the three state schools and the school for the deaf at Council Bluffs, the school for the blind at Vinton and the state sanatorium at Oakdale—the appropriation being $16,973,177. The assembly also voted to increase the remuneration of its members from $10 to $20 per day.

Education.—During 1949 Iowa had 7,500 public elementary schools, 860 public high schools, 23 public junior colleges and 7 private junior colleges. The number of teachers and superintendents in the public schools in 1947–48 was 22,787.

There were 25 colleges and universities in the state in 1949, most of which were privately endowed or supported by various church organizations. The state supports three institutions: the state university of Iowa at Iowa City; the Iowa State College of Agriculture and Mechanic Arts at Ames; and the Iowa State Teachers college at Cedar Falls.

Social Insurance and Assistance, Public Welfare and Related Programs.—The 1949–50 state appropriation for old-age assistance was $13,000,000; for aid to dependent children, $1,575,000; for child welfare, $220,000; for emergency relief, $30,000; and for aid to the blind, $350,000. The total old-age assistance payments of the state for the year ending June 30, 1949, was $28,946,323, of which $15,423,222 was contributed by the federal government. Total aid for dependent children for 1948–49 was $3,737,784; for child welfare, $272,664; for the blind, $835,253; for emergency relief, $164,482.

Contributions to the state unemployment insurance fund, as of June 30, 1949, totalled $9,947,111; during the fiscal year 1948–49, $3,959,582 was paid out of this fund in benefit payments; an increase of $1,544,485 over the fiscal year 1947–48. The reserve fund, as of June 30, 1949, totalled $7,800,056.

The state penal and correctional institutions, as of Nov. 30, 1949, had the following inmates: state penitentiary, Fort Madison, 1,172; men's reformatory, Anamosa, 764; women's reformatory, Rockwell City, 72; training schools for boys, Eldora, 174; training school for girls, Mitchellville, 101. The state has four hospitals for the insane—at Cherokee, Clarinda, Independence and Mount Pleasant—with a total of 5,915 patients as of Nov. 30, 1949. In addition, there were 63 county homes for the insane with 1,882 patients, plus 6 privately operated hospitals with a total of 694 patients.

Communications.—In 1949 Iowa had 9,737 mi. of primary roads; 6,505 mi. of paved highway; 926 mi. of bituminous surfaced roads; and 2,274 mi. of gravel roads. The state highway commission, for the fiscal year 1948–49, spent $12,729,390 for construction and $6,903,671 for maintenance.

The state is served by 12 major railroads with a total of 8,731 mi. of track in 1949. In 1948 these roads carried 6,261,075 passengers and 101,909,548 tons of freight. There were 353 mi. of electric interurban roads in the state; during 1948 they carried 829,823 passengers and 4,475,779 tons of freight. The number of passengers carried by motor bus during 1948 was 26,475,995. There were, in 1948, 110 mi. of oil pipe lines, 1,260 mi. of gasoline pipe lines and 1,616 mi. of natural gas pipe lines.

In 1949, 78% of all Iowa families had telephones, and 85% of all farms had telephones. There were 43 radio stations in 24 cities in the state. A television station, the first in the state, was opened late in the year by WOC in Davenport. There were 70,000 mi. of electric transmission lines in Iowa in 1948; 80% of the farms had electricity.

Banking and Finance.—There were, as of June 30, 1949, 558 state banks, 10 private banks and 98 national banks in Iowa, making a total of 666. Besides the 558 state banks, there were 163 bank offices, 204 small loan licencees and 204 credit unions under the supervision of the state banking department. Total assets of state banks on June 30, 1949, were $1,546,423,190; total deposits, $1,445,844,346; total capital stock, $30,353,000.

The revenue received from all taxes in Iowa for the fiscal year ending June 30, 1949, was $146,039,451. Of this total, 32.9% was from the state's 2% sales tax; 17.1% from the gasoline tax; 12.1% from motor vehicle licence fees; 11.5% from individual income taxes; 5.8% from state liquor store profits; 5.4% from use taxes assessed on articles purchased outside the state; and the balance from miscellaneous taxes. There was no state debt.

Agriculture.—There were 202,153 farms in Iowa in 1949, compared with 213,318 in 1940. These farms had a total acreage of 34,725,282; the average size was 171.8 ac. Of the total Iowa farms, 48.7% are owner-operated and 51.3% tenant-operated.

The total cash income of Iowa farmers in 1948 was $2,365,481,000, of which $2,009,470,000 was from livestock, $345,263,000 from crops and $10,748,000 from government payments. On Jan. 1, 1949, there were 30,919 auto trucks on Iowa farms; 212,790 tractors and 72,757 mechanical corn pickers, all figures showing an increase over the 1948 figures.

Table I.—*Leading Agricultural Products of Iowa*

Crop	1949	1948	Average 1938–47
Corn, bu.	553,847,000	677,056,000	507,760,000
Oats, bu.	238,222,000	273,870,000	183,472,000
Wheat, bu.	7,856,000	7,393,000	4,547,000
Rye, bu.	168,000	264,000	494,000
Potatoes, bu.	1,100,000	1,430,000	4,062,000
Hay, tons	4,855,000	3,913,000	5,629,000
Popcorn, lb.	31,500,000	54,860,000	54,788,000
Soybeans, bu.	28,778,000	35,190,000	25,894,000

The greatest proportion of Iowa's corn crop was fed to livestock. On Jan. 1, 1949, there were on Iowa farms 10,836,000 hogs, 4,769,000 cattle, 1,044,000 sheep, 291,000 horses and 7,000 mules.

Manufacturing and Industry.—There were 3,936 manufacturing plants in Iowa employing in Oct. 1949 145,800 persons. The average weekly wage in 1948 was $51. The total value of manufactured products for 1948 was estimated at $2,000,000,000, an increase of $350,000,000 over the figure for 1947.

Table II.—*Principal Mineral Products of Iowa*

Mineral	1946	
	Quantity	Value
Cement	6,145,326 bbl.	$11,312,627
Clay	696,704 tons	7,715,916
Coal	1,554,000 tons	5,579,000
Gypsum	560,094 tons	1,172,500
Stone	5,162,540 tons	6,646,27
Sand and gravel	7,938,572 tons	3,059,792

Mineral Production.—Iowa ranks 29th among the states in the value o its mineral products. The latest official production figures available i 1949 were for 1946. (M. TE.)

Iran. (PERSIA). An independent kingdom of western Asia. Iran is bounded on the east by Pakistan and Afghanistan, on the north by the U.S.S.R., on the west by Turkey an Iraq and on the south by the Persian gulf and Arabian sea. Area c. 634,413 sq.mi. Pop. (no census ever taken, 1948 est.): 17,000,000. Language: mainly Persian, but some Turki and Armenian in the north, Kurd in the west, Arabic in the south an Pashtu in the east. Religion: mainly Shiah Moslem but th Kurds (750,000) are Sunni; there are also c. 50,000 Gregoria Armenians and a few thousand Catholic Armenians, 40,000 Nestorians and 80,000 Jews. Chief towns (1948 est.): Tehran (cap 850,000); Meshed (250,000); Tabriz (214,000); Isfahan (205,000); Abadan (150,000); Shiraz (129,000); Resht (122,000) Hamadan (104,000). Ruler, Shah Mohammed Riza Pahlavi prime minister, Mohammed Said Maraghei.

History.—On Feb. 4, 1949, while the shah was distributin prizes at the Tehran university, an attempt was made on hi e by a member of the left-wing Tudeh party. The assailant, khr Rai, who fired several shots at close range, injuring the ah in the lip and back, was attacked by the crowd and died ter reaching the hospital. Martial law was declared, many deh members were arrested and the party was dissolved. The ah recovered from his injuries shortly after the attempt.

On Feb. 12 the soviet government protested to Iran against atements in *majlis* (parliament) that the Tudeh party was cked by the U.S.S.R. and that the soviet government was in-erfering in the internal affairs of the country. Replying to the viet note, the Iranian government called attention to the viet radio propaganda directed against Iran; and objection s made to the assertion that Iran was under U.S. military mination and had become an American base. It reiterated e fact that U.S. officers in Iran were merely paid advisers.

In the first week of March the *majlis* passed a new press act ereby insults to the royal family and heads of foreign states which there were reciprocal provisions, blasphemy against lam and instigation to revolt could be promptly punished.

The Imperial Bank of Iran, whose concession granted 60 ars previously expired at the end of Jan. 1949, reached an reement with the government whereby the bank would in ture operate under ordinary laws, depositing with the Bank elli Iran (national bank), free of interest, all deposits in cess of two-and-a-quarter times the amount of capital em-oyed in Iran by the bank and selling a further £1,000,000 to e government as exchange. The bank's name was subsequently anged to the British Bank of Iran and the Middle East.

On May 9, revising the constitutional law of 1906, the *majlis* fined the procedure for future constitutional amendments and ve the shah the limited right to dissolve *majlis* with the ap-oval of the senate (which, though provided for in the consti-tion, did not hitherto exist).

In June two middle-eastern statesmen paid official visits to an. Liaquat Ali Khan, the prime minister of Pakistan, was e first; he was followed by Emir Abdul Illah, the regent of aq. These visits were rounded off by that of King Abdullah of rdan who paid a state visit on July 28. The exchange of urtesies and views of these middle-east rulers with the shah d his government strengthened the bonds of friendship and llaboration existing between these Moslem countries.

After protracted negotiations between the Iranian government d representatives of the Anglo-Iranian Oil company for an crease of royalties payable to Iran, agreement was reached d on July 19 the minister of finance presented to *majlis* a bill nbodying the agreement. The bill provided: (1) that from 48 the royalty on oil be raised from 4*s.* to 6*s.* a ton and that e company pay £3,360,000 in respect of 1948; (2) that the ex-se on oil be raised from 9*d.* to 1*s.* a ton and the company to y £600,000 in respect of 1948; (3) that the company should y 20% of its profits from general reserve, reckoned as before duction of British income tax instead of after deduction of x as hitherto, and to pay £5,000,000 in respect of 1948. The ajlis was dissolved at the end of June before a vote could be ken on the oil agreement.

The 1947 monetary agreement with Great Britain dealing th the convertibility of Iranian sterling credits into other rrencies for imports obtainable in Britain was extended for other year.

During October and November elections for the 16th *majlis* d the new senate were held all over the country.

On Nov. 16 the shah flew to Washington on an official visit at e invitation of President Truman and addressed both houses congress. He returned home on Jan. 2, 1950.

Education.—(1938) Schools 8,381, pupils 457,236, teachers 13,078. ere is one university at Tehran.

Finance and Banking.—Budget estimates (1948–49): revenue 7,755,000,000 rials; expenditure 8,398,000,000 rials; (1949–50) 7,705,000,000 rials; expenditure 10,835,000,000 rials. National debt (Dec. 1948): 5,400,000,000 rials. Currency circulation (July 1949): 6,120,000,000 rials. Gold reserve (July 1949): U.S. $140,000,000. Bank deposits (July 1949): 7,960,000,000 rials. Monetary unit: rial with an exchange rate Nov. 15, 1949, of 32.5 rials to the U.S. dollar.

Foreign Trade.—Imports (1948–49): 5,440,000 rials. Exports, including oil exports of the Anglo-Iranian Oil company (1948–49): 18,990,000 rials. Principal imports: sugar, cotton piece goods, metals and metal products and tea. Principal exports: oil, rugs, dried fruit and nuts and medicinal plants and seeds.

Transport and Communications.—Roads (1949): 17,000 mi., of which 8,000 mi. were suitable for vehicles. Licensed motor vehicles (Dec. 1948): cars 9,800, commercial vehicles 11,600. Railways (1948): 1,750 mi.

Agriculture.—Main crops (in metric tons): wheat (1948) 1,700,000; barley (1948) 600,000; cotton (1948) 22,000; rice (1948) 424,000; sugar (1948) 46,000. Livestock: sheep (March 1948) 13,000,000; goats (1946–47) 6,800,000; cattle (March 1946) 2,500,000; horses (1946–47) 350,000. Wool production (1948–49) 11,000 metric tons.

Industry.—Fuel and power (in metric tons): coal (1948 est.) 150,000; crude oil, production of the Anglo-Iranian Oil company (1948) 25,270,000. Raw materials (in metric tons, estimated annual production): copper ore, 1,000; sulphur 600; red oxide 10,000; arsenic ore 500. Cement production (1946) 35,000 metric tons.

Iraq.

An independent Arab kingdom of Mesopotamia, Iraq is bounded by Syria, Turkey, Iran, the Persian gulf, Saudi Arabia and Jordan. Area: *c.* 116,600 sq.mi. Pop.: (1935 official est.) 3,560,456; (Oct. 1947 census): 4,794,449. Chief towns (pop. est. 1946): Baghdad (cap., 832,927), Mosul (279,361), Basra (181,814). Religions: Moslem (91%). Languages: Arabic 67%, Kurdish 25%, Persian 3%, Turki 2%, others 3%. The Sunni Arabs are the ruling class. Ruler, King Feisal II (born May 2, 1935); regent, Crown Prince Abdul-Ilak; prime minister Gen. Nuri Pasha es-Said (to Nov. 7); from Dec. 10, Ali Jawdat al-Ayyubi.

History.—On Jan. 6, 1949, the government of Muzahim al-Pachachi resigned and was succeeded by one headed by Nuri Pasha es-Said, who at once sent messages to other Arab governments announcing the determination of Iraq to continue action to free Palestine and strengthen the Arab league.

On Feb. 14–15 Yusuf Salman Fahad, secretary-general of the Communist party of Iraq, and three other Iraqi Communist leaders were sentenced and hanged after conviction by a court martial of activities aimed at destroying the foundations of the state and instigating elements of the Iraqi armed forces to join their subversive organization. A number of further arrests of Communists and others was subsequently reported.

The cabinet was reshuffled on March 18, Abdul Ilah Hafidh being replaced at the foreign ministry by Fadhil Jamali, who as Iraqi minister in Cairo had been due to attend the meeting of the Arab league council there on March 17 but had been urgently summoned to Baghdad instead.

The prime minister's visit to Syria (*q.v.*) in April, followed by the statement that Iraq and Syria would stand together against aggression, was connected by many with the press reports that credited him with a plan to unite Syria with Iraq under King Feisal II and a council of regency. This was known as the "fertile crescent" plan, in distinction from the Greater Syria plan of King Abdullah of Jordan. In a parliamentary statement of May 3, the Iraqi foreign minister said his country's foreign policy was based on maintaining the independence and safety of Iraq according to the principles of the Arab revolt. The recent coup d'etat in Syria was a domestic affair, but Iraq would welcome unity with Syria if Syria desired it. Iraq's attitude to the Arab league was based on its character. He accused the secretary general of the league of having "given himself authority" which was not his by right. This was believed to have been prompted, among other things, by Abdul Rahman Azzam Pasha's visit to Husni ez-Zaim the day after Nuri Pasha's visit and the dictator's subsequent repudiation of all plans of union. Iraq, he said, favoured revision of the statutes so as to curtail the powers of the secretariat and to encourage bilateral alliances among the member states.

In a foreign policy statement of June 1 the prime minister told the Iraqi senate that he would send Muzahim al-Pachachi to Cairo to discuss Iraqi-Egyptian differences. With Great Britain, he said, it was necessary to negotiate a new treaty; but Iraq preferred to participate in a general pact grouping the Arab independent powers, like the North Atlantic treaty. They had been opposed in 1920–21 to the division of the Arab countries into Lebanon, Syria, Iraq and Palestine and regarded the division as exclusively imperialist. It was therefore surprising that the unification of these regions today should be called an imperialist project.

No agreement had been reached on the resumption of oil pumping through the pipe line to the Haifa refineries, and oil pumping had still not been resumed by the end of November.

It was officially announced in Baghdad on Aug. 28 that while in London that same month, Prime Minister Nuri Pasha had secured loans totalling £10,500,000, of which £3,000,000 were from the London market for the Iraqi state railways, £4,500,000 from the International Bank for reconstruction schemes up to 1952 and £3,000,000 free of interest from concessionary oil companies.

The additional 16 in. pipe line from Kirkuk to Tripoli was completed and oil began to flow on Aug. 1.

The Iraqi forces in Palestine were withdrawn during March and April and the Iraqi military government in the Jenin-Tulkarm area handed over to the Jordanian authorities. Iraq was not represented at the Palestine armistice negotiations at Rhodes, where Jordan negotiated on its behalf, nor at the meeting with the U.N. Conciliation commission in Lausanne, Switz.

On Nov. 7 Nuri Pasha resigned and on Dec. 10 a coalition government was formed under the premiership of Ali Jawdat al-Ayyubi, with Muzahim al-Pachachi as deputy prime minister and minister of foreign affairs.

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Education.—Schools (1946–47): elementary, 1,057; pupils, 143,070; teachers, 5,627; intermediate and secondary, 151; pupils, 20,424; teachers, 1,174; technical, 48; students, 7,756; colleges, 7; students (excluding the engineering college), 3,644; institutions of higher education, 10.

Finance and Banking.—Budget: (1949–50 est.) balanced at 25,000,000 Iraqi dinars. Currency circulation: (Aug. 1949) 35,400,000 dinars; (Aug. 1948) 33,500,000 dinars. Bank deposits: (Aug. 1949) 12,000,000 dinars; (Aug. 1948): 12,100,000 dinars. Monetary unit: Iraqi dinar at par with the pound, on Dec. 15, 1949=$2.80 U.S.

Foreign Trade.—(1948) Imports: 46,000,000 Iraqi dinars; exports, including oil: 20,000,000 Iraqi dinars. Principal imports: cotton piece goods, iron and steel, machinery and sugar. Principal exports: oil, dates, wool and cereals. Main sources of supply: United Kingdom 43%; United States 7%; Italy 6%. Main destinations of exports (excluding oil): India 19%; United Kingdom 17%; United States 13%.

Transport and Communications.—Roads: 4,200 mi. Licensed motor vehicles (Dec. 1948): cars, 6,130; commercial vehicles, 7,600. Railways (1946–47): 966 mi.; passenger-miles, 392,000,000; freight net ton-miles, 377,000,000. Air transport (1947): miles flown, 787,451, passenger-miles, 3,868,787. Telephones (1947): subscribers, 13,043.

Agriculture.—Main crops (metric tons, 1948): barley 588,000; wheat 327,000; rice 370,000; dates (1947) 305,000; tobacco (1949) 4,000; cotton 1,000. Livestock (Dec. 1946): sheep 8,000,000; cattle (1945) 866,000; asses 435,000; horses (Dec. 1945) 198,000. Wool production (1948–49): 11,000 metric tons.

Industry.—Crude oil (1948): 3,427,000 metric tons.

Ireland, Northern.

Northern Ireland comprises the six counties of Antrim, Armagh, Down, Fermanagh, Londonderry and Tyrone; it forms part of the United Kingdom of Great Britain and Northern Ireland, but (from 1920) has its own parliament and executive (with limited powers for local purposes) although it is represented in the imperial parliament by 13 members. Area: 5,238 sq.mi. Pop. (Dec. 31, 1948, est.): 1,365,000. Chief towns (pop. est. 1948): Belfast (cap., 450,000); Londonderry (49,000); Bangor (19,000). Language: English. Religions (1937 census): Roman Catholic 33.5%, Presbyterian 30.5%, Episcopalian 27%, Methodist 4.3%, etc. Governor, Earl Granville; prime minister, Sir Basil Brooke.

History.—Sir Basil Brooke, the prime minister of Northern Ireland, had announced that there would be a general election on Feb. 10, 1949, in order that the voters could respond to the British government's assurance that the status of Northern Ireland would not be changed unless its people so wished. Sir Basil had visited Clement Attlee in London to get this assurance when Eire declared its intention of becoming an independent republic. The Nationalist opposition maintained that Sir Basil was rushing the election before the new electoral register came into force on April 1 so as to disfranchise a large number of possibly hostile voters. The campaign in Belfast, which is not noted for quiet elections, was even bitterer than usual. When the wrangling was finally over the Unionists were seen to have triumphed utterly. They were returned with 37 seats instead of their previous 35; the Nationalists secured 9 (previously 8); Independent Unionists 2, Independent Labour 1, Socialist Republican 1 and Independents 2 were all unchanged; the North of Ireland Labour party which had 3 seats was wiped out.

(R. KX.)

Education.—(1947–48) Schools: elementary 1,656, pupils 185,418; secondary 77, pupils 21,973; technical 115, students 30,124. The Queen's University of Belfast: professors and lecturers 216, students 2,685.

Finance and Banking.—Budget: (1948–49) revenue £60,306,286; expenditure £38,712,828; (1949–50 est.) revenue £65,057,000; expenditure £44,995,000. Expenditure figures exclude contribution toward imperial expenditure estimated at (1948–49) £21,500,000 and (1949–50) £20,000,000. Public debt (March 1949): £28,666,725. Currency circulation (July 1949): £11,087,282. Ulster savings certificates (Sept. 1949): £41,335,686. Trustee savings banks deposits at Belfast (Nov. 1949): £44,147,148. Commercial bank deposits (June 1948): £101,107,000.

Transport and Communications.—Roads (1947) 13,000 mi. Licensed motor vehicles (Aug. 1949): cars 41,572, commercial vehicles 16,743; Railways (1947): 644 mi.; passengers carried 17,411,803; goods 2,095,637 tons. Belfast airport (1948): flights 6,283, passengers flown 81,884, cargo carried 605,812 lb., mail 639,206 lb. Telephones (1947): subscribers 37,067. Radio receiving set licences (1947) 173,505.

Agriculture.—Main crops (metric tons, 1948): oats 398,000; potatoes 1,693,000; wheat 4,800; barley 6,600; dredge corn 7,400; hay 792,000; Livestock (June 1949): cattle 980,000; sheep 645,000; pigs 458,000; horses 55,000; goats and kids 9,600; asses 5,500; poultry 24,237,000. Food production (1948–49): sales of milk 80,000,000 gal.; eggs 74,000,000 dozen; pork 373,000 cwt.; mutton and lamb 95,000 cwt. Shipments to Great Britain (1948–49): milk 18,600,000 gal.; eggs 32,000,000 doz.; meat 752,000 cwt.; bacon and ham 131,000 cwt.; poultry 140,000 cwt.

Industry.—Electricity sales (1948): 467,000,000 kw.hr. Value of exports of linen goods to the United Kingdom for 12 months ending Sept. 30, 1948: £18,800,000.

Ireland, Republic of.

An independent republic covering five-sixths of an island to the west of Great Britain. Area: 26,602 sq.mi. Pop.: (1946 census) 2,953,452; (mid-1948 est.) 2,997,000. Language: English c. 76%, Erse (Gaelic) c. 24%. Religion: Roman Catholic 93.4%; Chief towns (1946 census): Dublin (cap., 506,635); Cork (75,361); Dun Laoghaire (44,689); Limerick (42,987); Waterford (28,332). President, Sean Thomas O'Kelly; prime minister John A. Costello.

History.—It might seem unimportant that the Irish government celebrated New Year's day by announcing that white bread of a prewar standard would once again be allowed in the shops. True, the bakers received this offer with stony refusals claiming that the 75% extraction flour was too expensive, bu the gesture was typical of the government's efforts to return to a state of life unrestricted and decontrolled. John A. Costello's inter-party government, largely composed of the conservativ Fine Gael, reiterated in the words of its minister for industry and commerce, Daniel Morrissey, that it "intends to preserv the system of private enterprise in industry." That such policy was possible in 1949 was perhaps caused by the fact tha large wage increases granted after the Emergency Powers standstill order was repealed in March 1946 had raised the earning index to a point almost exactly level with the cost-of-living index. Retail prices remained constant for over a year. And so although the prices of clothing and of whisky rose during 194 hen they were decontrolled, though interest rates rose as banks ied to draw in the horns of credit, there was comparatively ttle labour trouble in the republic. The January dockers' strike n Dublin's deep-water port and a six-week strike in the freight epartment of Coras Iompair Eireann (Irish Transport comany), during August and September, caused some inconvenince but were not indicative of any deep unrest.

The government's outstanding problem was to curb inflation hile embarking on the most expensive investment schemes the ountry had ever experienced. A ten-year housing scheme was xpected to cost £100,000,000; another £17,000,000 was to proide hospital accommodation for a further 2,540 beds; James Dillon, minister for agriculture, announced a project to reclaim ,000,000 ac. of unproductive land in ten years at a cost of 40,000,000. Yet all the signs were not pointing to inflation. In he seven months ending in June 1949 savings bank deposits ncreased by more than £2,000,000 and there was also a big ecovery in savings certificates. But John Costello pointed out n November that current savings might not be enough to nance the capital investment to which his government was ommitted and stated that Irish sterling assets in the United Kingdom, whose net total was then about £225,000,000, might ave to be transferred for use at home. There was a possibility, e said, of a separate capital budget in 1950.

Side by side with the government's believers in private enterrise and in state enterprise, marched the cabinet's left wingers, elievers in state welfare; and they found the going harder. After some delay and much toil William Norton, minister for ocial welfare and leader of the Irish Labour party, produced in October his White Paper on compulsory insurance. The scheme vas planned to cover every person over the age of 16 who vorked for an employer, though the position of state employees vas left uncertain. Meanwhile Noel Browne, Clann na Poblachta (Republican party), minister for health, continued to prepare a cheme for state medicine, while the Medical Association of reland, unable to extract any details of the plan, gathered their trength to oppose what they feared would be the worst.

Politically the drama of the year was the declaration of an ndependent Irish republic one minute after midnight on Easter Monday. The six counties of Northern Ireland ignored the leclaration, but King George VI sent a message of goodwill to he new republic. From Belfast Sir Basil Brooke announced hat this step must perpetuate partition, and he seemed in part onfirmed when in May the British parliament passed the Ireand act which, while it allowed the citizens of the republic the ame rights as those of the commonwealth, guaranteed the speial position of Northern Ireland for so long as the majority of ts people wished to preserve it. The Ireland act provoked nanimous indignation in the south and a large protest meeting vas held in Dublin.

Financially, the republic had a good year. For the first six nonths of 1949 exports were up 36% and imports down 15% against the comparable figures for 1948. It seemed that the reublic's adverse trade balance, which in the postwar years had een running at £90,000,000 to £100,000,000 a year, might be ut to about £70,000,000, and this—bearing in mind invisible xports, chiefly earned by the tourist industry—would bring the alance of payments near to equilibrium. Agriculture was exanding after a number of stagnant years; the volume of donestic exports for the first six months of 1949 increased by 2% over the figures for the 1948 period. As for industry, which together with services was producing an output valued at about two-thirds that of Irish agriculture, Morrissey pronounced himself satisfied. Unemployment had slightly decreased. One problem, especially in view of the projected government works, was the continued inability of Bord na mona (Fuel board) and the Electricity Supply board to get men to work on schemes that would take them away from their homes. There was also

IRISH CELEBRANTS thronging Dublin's O'Connell bridge, the centre of festivities at 12:01 A.M. on April 18, 1949, when a 21-gun salute announced the birth of the new Republic of Ireland a serious shortage of skilled building workers and a campaign was begun to attract Irishmen in Britain back to build homes for their countrymen.

The whole nation mourned Douglas Hyde, first president of Eire, who died on July 12. (R. Kx.)

Education.—(1947–48) Schools: elementary 4,946, pupils 444,132, teachers 12,772; secondary 404, pupils 43,780; university colleges 4, students 7,202, professors and lecturers 558.

Finance and Banking.—Budget: (1948–49) revenue £71,690,000, expenditure £71,940,000; (1949–50 est.) revenue £73,350,000, expenditure £73,140,000. National debt (March 1948): £104,800,000. Currency circulation (Sept. 1949): £51,800,000. Gold reserve (Sept. 1949): 11,000,000 U.S. dollars. Bank deposits (end 1949): £242,200,000. Monetary unit: Irish pound at par with the pound sterling.

Foreign Trade.—Imports: (1948) £136,700,000. Exports: (1948) £47,500,000. Main imports: machinery and vehicles, wheat and corn, textiles and coal. Main exports: cattle and horses, meat, fish and dairy products, ale. In 1948 54% of total imports were supplied by the United Kingdom, and 87% of total exports in 1948 went to the United Kingdom.

Transport and Communications.—Roads (1949) 49,071 mi. Licensed motor vehicles (Dec. 1948): cars 60,453, commercial vehicles 36,535. Railways (1948): 2,440 mi.; freight (net ton-mi.) 320,000,000. Shipping (1948): total tonnage 43,663. Air transport (Aer Lingus, 1948): flights 11,908, mi. flown 2,542,783, passengers flown 180,470, cargo carried 1,080 tons, mail 70 tons. Telephones (1946): subscribers 55,426. Radio receiving set licences (1948): 255,000.

Agriculture.—Main crops (metric tons, 1948): wheat 416,000; oats 805,000; barley 102,000; rye 5,000; potatoes 3,328,000; flax 3,600. Livestock (June 1948): cattle 3,921,000; sheep 2,058,000; pigs 457,000; horses 421,000; poultry 20,045,000. Fisheries: total catch (1948): weight 20,725 metric tons; value £615,446. Food production (metric tons, 1948): butter, co-operative creameries only, 28,800; cheese 2,400; meat 120,000.

Industry.—(1947) Persons employed in industrial establishments 183,444. Fuel and power (1948): coal consumption 177,000 metric tons; manufactured gas 144,000,000 cu.m.; electricity 689,000,000 kw.hr. Manufactured goods (1947): distilled spirits 1,501,000 proof gal.; stout, porter, ale and beer 1,485,000 bbl.; woollen and worsted tissues 6,345,000 sq.yd.; cotton piece goods 5,884,000 sq.yd.; boots and shoes 5,000,000 pairs; cigarettes 9,023,000 lb.

Irish Free State: *see* IRELAND, REPUBLIC OF.

Iron and Steel. For convenience in coverage, this subject is subdivided and handled under the three major headings—iron ore, pig iron and steel.

Iron Ore.—Sharp advances in 1948 not only brought world production to above the 1939 level, but so closely approached the peak of war demand that continued improvements in 1949 were expected to fill the gap. The iron ore outputs of countries normally producing 1,000,000 tons a year, and the estimated world totals during recent years, are presented in Table I.

Table I.—*World Production of Iron Ore*

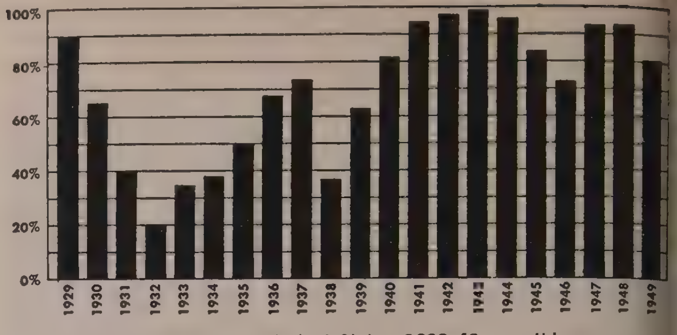
(In thousands of short tons)

	1944	1945	1946	1947	1948	1949*
United States	105,412	98,982	79,344	104,263	113,124	90,082‖
Canada	553	1,135	1,581	1,919	1,354	2,835§
Newfoundland	520	1,103	1,393	1,617	1,644	?
Brazil	862	789	1,102	1,022	1,589	?
Chile	744	1,042	1,491	1,772	2,435	2,169‡
Austria	3,323	357	520	976	1,320	1,162§
Czechoslovakia	1,746	304	1,230	1,502	1,575	1,081‡
France	20,958	8,502	17,893	20,612	25,363	25,811§
Germany	?	?	4,564	4,920	7,202	5,771†
Great Britain	17,328	15,902	13,634	12,413	14,661	12,504‖
Italy	430	148	145	249	501	439§
Luxembourg	3,214	1,550	2,477	2,196	3,749	3,913‖
Poland	750	103	467	600	664	?
Spain*	1,663	1,291	1,760	1,669	1,862	1,498§
Sweden	7,995	4,332	7,570	9,805	13,795	10,057§
India	2,647	2,536	2,697	2,798	?	?
Japan	4,815	1,495	624	550	612	609§
Korea	3,734	?	83	103	?	?
Algeria	864	1,326	1,842	1,715	2,065	1,821‡
Morocco, Spanish	762	843	868	958	997	?
Tunisia	98	146	202	440	768	544‡
Australia	2,443	1,750	2,100	2,500	?	?
Total	220,000	176,000	170,000	206,000	232,000	?

*Incomplete data. †7 months covered. ‡8 months covered. §9 months covered. ‖10 months covered.

The 1949 outputs of most of the important producing countries showed a marked advance over 1948, as is indicated by the incomplete 1949 data included in the above table. These figures indicate an increase in 1949 that might be as much as 10% above 1948.

United States.—The salient statistics of the iron ore industry in the United States are presented in Table II, as reported by the U.S. bureau of mines.



STEEL PRODUCTION in the United States, 1929-49; monthly average percentage of capacity (figures compiled by American Iron and Steel Institute)

Production declined somewhat in 1949, the total for the first ten months being 90,081,583 short tons, compared with 99,761,252 tons in the same period of 1948. The decline in the remaining two months was expected to be even more marked, as the usual seasonal decline of the winter months was expected to be supplemented by a drop in demand for ore because of a coal shortage.

Table II.—*Production of Iron Ore in the United States*

(In thousands of short tons)

	1943	1944	1945	1946	1947	1948
Crude ore						
Production	134,036	124,343	119,070	94,298	127,649	141,372
Open-pit	97,272	92,281	88,407	71,522	95,900	110,876
Underground	36,764	32,061	30,663	22,776	32,870	30,496
Shipments	132,857	125,522	119,324	94,064	127,589	141,259
To consumers	87,834	83,150	76,153	60,377	79,813	85,846
To concentrators	45,024	42,372	43,170	33,686	47,775	55,415
Usable ore						
Production	113,398	105,412	98,982	79,344	104,263	113,124
Shipped direct	89,414	82,051	75,901	60,496	79,657	86,108
Beneficiated	23,984	23,360	23,080	18,848	23,997	26,478
Shipments	110,676	106,512	98,713	78,501	104,513	112,921
Imports	447	519	1,337	3,159	5,491	6,842
Exports	2,716	2,417	2,311	1,687	3,144	3,451
Consumption	112,512	111,936	96,498	80,836	107,650	112,559

Canada.—Iron ore production reported from Canada dropped from 1,919,366 short tons in 1947 to 1,354,064 tons in 1948. Through Aug. 1949 the total was 2,318,501 tons, which presumably included the Newfoundland output. Another large deposit was being developed in Labrador.

Pig Iron.—World production of pig iron in 1948 was 14% greater than in 1947, 10% greater than in 1939 and only 3% under the 1943 war peak. Outputs of pig iron and ferroalloys in countries normally producing amounts in excess of 1,000,000 tons a year are shown in Table III, with estimated world totals.

In 1949 increases in output elsewhere were offset by a decrease in the United States, so that the year's total was expected to be about the same as in 1948.

Table III.—*World Production of Pig Iron*

(In thousands of short tons)

	1944	1945	1946	1947	1948	1949*
Australia	1,462	1,257	979	1,268	1,270	874§
Austria	1,021	107	64	307	676	713
Belgium	792	810	2,382	3,105	4,340	3,209
Canada	2,024	1,956	1,521	2,120	2,372	2,01
China	2,339	544	1	?	?	?
Czechoslovakia	1,746	635	1,058	1,569	1,822	?
France	3,189	1,320	3,852	5,386	7,248	6,970
Saar	1,796	?	259	794	1,358	1,29
Germany	14,738	1,238	2,297	2,493	6,394	5,917
Great Britain	7,545	7,960	8,692	8,457	10,389	8,757
India	1,602	1,562	1,485	1,560	1,488	830
Italy	341	83	226	425	580	374
Japan	3,080	1,081	240	410	922	1,226
Luxembourg	1,486	349	1,504	2,004	2,896	2,267
Poland	762	252	800	956	1,249	?
Sweden	979	866	793	799	831	477†
U.S.S.R.	16,800?	18,800?	16,750?	18,000?	18,500?	?
United States	62,897	54,956	46,323	60,141	61,966	48,976‖
Total	119,000	87,000	87,000	109,000	124,000	?

*Incomplete data. †6 months covered. ‡9 months covered. §10 months covered. ‖11 months covered.

Table IV.—*Data on Pig Iron and Ferroalloys in the U.S.*

(In thousands of short tons)

	1943	1944	1945	1946	1947	1948
Pig Iron						
ction	60,765	61,004	53,224	44,842	58,327	60,073
ents.	60,787	60,996	53,265	45,076	58,368	60,051
ts.	1	6	21	14	33	219
ts.	144	162	91	96	40	1
mption.	60,315	60,952	53,187	45,072	58,291	60,026
tings	6,517	6,818	6,567	6,611	8,096	7,849
en-hearth	47,108	48,281	41,683	34,608	45,338	47,267
semer	6,258	5,583	4,751	3,723	4,712	4,778
tric	394	240	163	113	127	132
Ferroalloys						
ction	2,033	1,894	1,732	1,481	1,814	1,893
ents.	1,995	1,861	1,662	1,551	1,842	1,952
romanganese	723	715	610	492	615	659
egeleisen	150	155	158	112	124	109
rosilicon	806	687	616	614	766	819
ers	316	304	278	333	336	365

nited States.—The salient data on pig iron and ferro-
ys in the United States are presented in Table IV, as re-
ed by the U.S. bureau of mines.

otal blast furnace output in 1948 was only 1.5% under the
war peak. In 1949 production was maintained during the
five months at 10% above the 1948 average rate, but sagged
n June to September, and dropped sharply in the fourth
rter. Output through November was 48,430,195 short tons
ig iron and 545,433 tons of ferroalloys, a total of 48,975,628
. These figures did not include the output of ferroalloys in
tric furnaces.

anada.—The output of Canadian blast furnaces increased
n 2,119,679 short tons in 1947 to 2,371,568 tons in 1948,
uding 2,120,909 tons of pig iron and 250,659 tons of ferro-
ys. Production continued to improve in 1949, reaching a
l of 2,010,015 tons through October, including 1,825,023
of pig iron and 184,992 tons of ferroalloys.

teel.—World production of steel in 1948 was 11% higher
n in 1947. The steel production of countries having an out-
in excess of 1,000,000 tons a year is shown in Table V,
g with estimated world totals.

reliminary reports for 1949 indicated a year's total that
ld have run somewhat higher than in 1948, except for re-
ions in the United States because of a coal shortage, which
expected to reduce the 1949 total to something like 160,-
000 tons.

nited States.—The 1948 steel output of the United States
exceeded only in the war years 1943 and 1944, and fell
t of the war peak by a little more than 1,000,000 tons. The
nt statistics of the industry are shown in Table VI, as re-
ed by the American Iron and Steel institute.

1949 production declined sharply in each succeeding quar-
but the average monthly output did not fall below that of
8 until after July. Heavy reductions were recorded in the
quarter, especially in October, because of a coal shortage,
the total through November dropped to 70,080,776 tons.

Table V.—*World Production of Steel*

(In thousands of short tons)

	1944	1945	1946	1947	1948	1949*
lia	1,706	1,508	1,177	1,376	1,236	973‖
a	?	189	207	394	714	674§
m	701	813	2,518	3,180	4,318	3,289§
da	2,930	2,803	2,293	2,945	3,202	2,663‖
oslovakia	2,778	1,045	1,843	2,520	2,916	?
	3,408	1,822	4,859	6,338	7,984	7,490§
	1,974	?	321	776	1,346	1,450§
any	20,192	322	2,963	3,290	6,127	7,579§
Britain	13,599	13,243	14,220	14,246	16,662	14,472‖
	1,468	1,429	1,376	1,349	1,224	991‡
	1,138	437	1,270	1,874	2,342	1,669§
	7,032	1,177	608	1,041	1,889	2,377§
bourg	1,389	291	1,426	1,888	2,704	2,167‖
d	755	546	1,344	1,731	2,070	?
en	1,320	1,327	1,335	1,311	1,384	747†
R. (est.)	15,400	19,800	20,000	22,000	22,200	?
States	89,642	79,702	66,603	84,894	88,640	70,081¶
al.	173,000	134,000	128,000	154,000	171,000	?

omplete data. †6 months covered. ‡8 months covered. §9 months covered.
months covered. ¶11 months covered.

Table VI.—*Steel Industry in the U.S.*

(In thousands of short tons)

	1944	1945	1946	1947	1948	1949
Capacity	93,565	95,505	91,891	91,241	94,233	96,121
Production	89,642	79,702	66,603	84,894	88,640	77,868
Basic open-hearth	79,168	71,070	60,112	76,209	78,715	70,228
Acid open-hearth	1,196	870	600	665	625	
Bessemer	5,040	4,305	3,328	4,233	4,248	3,947
Electric	4,238	3,557	2,563	3,788	5,057	3,694
Shipments	63,251	56,602	48,776	63,057	65,973	?

Canada.—Canadian steel production advanced from 2,945,166 short tons in 1947 to 3,201,656 tons in 1948, including 3,089,027 tons of ingots and 112,629 tons of castings. In 1949 operations continued at about the same rate as in 1948, with 2,578,272 tons of ingots and 84,987 tons of castings, or a total of 2,663,259 tons through October. (*See* also BUSINESS REVIEW; METALLURGY.)

FILMS OF 1949.—*Iron Mining* (Academy Films). (G. A. Ro.)

Iron and Steel Institute, American: *see* SOCIETIES AND ASSOCIATIONS.

Irrigation. In general 1949 was a relatively favourable year for irrigation. Where there was not plenty of water the areas of shortage were not as extensive as usual and the areas that did suffer shortage of supply were even less extensive.

When the departures of actual stream flow from the amounts forecast from the April 1949 snow survey of the department of agriculture were computed they were fairly numerous but their net effect did not constitute a serious deviation from harmony. The stream-flow year ends Sept. 30, but relatively few gauge-station records had been completed on that date.

As for the outlook for the irrigation supply for 1950, an October compilation showed a somewhat spotted promise based on existing reservoir carry-over. Generally the prospect was not quite so favourable as was the case a year earlier, but the winter began early in parts of the west, and it was possible the outlook might change for the better.

An all-time construction program was accomplished by the United States bureau of reclamation in 1949 in developing water resources for irrigation, domestic and industrial use, hydroelectric power, recreational areas and fish and game refuges and many other water conservation facilities in the 17 states lying wholly or partly west of the 97th meridian. Contracts totalling more than $170,000,000 were awarded during fiscal year 1949 for construction, equipment and materials on bureau of reclamation projects.

At the end of the fiscal year (June 30, 1949) the bureau had in operation, under construction or authorized, 81 irrigation and multipurpose projects. Of these projects or divisions of projects 60 were producing agricultural products, electric energy, or furnishing municipal-industrial water.

Under the bureau's widely diversified schedule of river-basin-wide multipurpose operations, the area of western federal project irrigated land was increased during 1948 to a total of 4,458,775 ac. The installed capacity of hydroelectric plants on the bureau's projects was increased 263,000 to a total of 2,757,000 kw., and output for the fiscal year rose to 18,500,000,000 kw.hr.

In a seven-year program extending through the 1956 fiscal year, the bureau would, with congressional authorization and appropriation, provide a full supply of water for the irrigation of about 1,662,600 additional acres of land and additional water for 2,917,700 ac. of inadequately irrigated land. The installed hydroelectric generating capacity would be increased by about 2,472,200 kw.

The largest single contract awarded by the bureau during the 1949 fiscal year amounted to $13,348,419 and covered the completion of the gigantic pumping plant at Grand Coulee dam, Wash. Another large contract, nearly $11,900,000, covered construction of Canyon Ferry dam and power plant on the Missouri river, near Helena, Mont. The two largest equipment contracts awarded totalled $7,747,985 and covered the last three generators and turbines for Grand Coulee power plant. Other major equipment contracts totalling $4,797,748 covered the installation of two 82,500-kw. generators and turbines for the power plant at Hoover dam, 726 ft. high, the world's highest concrete dam.

Construction was in progress at the end of the 1949 fiscal year on 23 storage dams and 1 diversion dam, 9 power plants, 22 pumping plants, 440 mi. of main canals and more than 2,000 mi. of transmission lines.

Ten outstanding construction jobs were completed by the bureau during the year, namely: Jackson Gulch dam, Mancos project, Colo.; Cascade dam, Boise, Ida.; Long Lake dam, Columbia basin, Wash.; Olympus dam, Horsetooth reservoir dam, Aspen Creek siphon and Prospect Mountain conduit, Colorado-Big Thompson project, Colo.; Cambridge diversion dam, Missouri river basin, Neb.; Heart Mountain power plant, Shoshone project, Wyo.; and Phoenix-Tucson No. 2 transmission line, Davis dam, Ariz.-Nev.

Construction was started during the 1949 fiscal year on seven new dams, namely, North Coulee, Wash.; Dickinson, N.D.; Shadehill, S.D.; Platoro, Colo.; Canyon Ferry, Mont.; Cedar Bluff, Kan.; and Bonny, Colo.

Major accomplishments under the bureau's programs in 1949 included: Expansion of generating facilities at Grand Coulee dam, Wash., to bring the total name plate capacity to 1,100,000 kw.—the greatest installed capacity in a single hydroelectric plant any place in the world; the starting of major construction activity at Hungry Horse dam, near Kalispell, Mont., which would be 564 ft. high, making it the third highest and fourth largest concrete dam in the world; the initiation of United Western Investigations to determine the feasibility of transfer of surplus Columbia river water and of coastal streams in the Pacific northwest southward to California; the beginning of reconnaissance studies for the development of hydroelectric power and other water resources in Alaska; and power production at Hoover dam, Parker dam and Siphon Drop power plants, all on the Colorado river, which fell short only about 8% of the 1944 war year record of 7,205,218,623 kw.hr.

Crops aggregating 13,256,688 tons and valued at $534,623,541, averaging $113.76 per acre, were produced on the 60 operating federal reclamation projects during the 1948 crop year. The cumulative value of these crops since 1906, exceeding $6,000,000,000, was more than four times the total reclamation investment to date.

A total of 296 farm units, located on five bureau projects, were opened to settlement by veterans during the fiscal year ending June 30, 1949. More than 9,300 applications were received by local examining boards for the 296 farm units totalling 30,729 irrigable acres.

Mexico.—The ministry of hydraulic resources, a unit of the government of Mexico, in 1949 had 37 large and 162 small irrigation projects under construction and in addition was developing many wells for irrigation water supply. Included in the program of construction were several large projects such as the Obregón dam on the Yaqui river in the state of Sonora, with an estimated storage capacity of 2,500,000 ac.ft. to irrigate 500,000 ac.; the Moreles diversion dam on the Colorado river in a stretch where the river forms the boundary between the United States and Mexico. This dam would cost $10,000,000 and provide sufficient storage to irrigate 550,000 ac. in Mexico. Construction was about to start on the Falcon dam on the Bravo river. This structure was to be constructed in co-operation with the government of the United States and would include hydr electric installations. The project was expected to be complet in 1953 at a cost of $50,000,000. (*See* also Aqueducts; Dam Floods and Flood Control; Meteorology; Soil Erosion a Soil Conservation.)

Films of 1949.—*Life in the Central Valley of California* (Coror Instructional Films). (A. T. M.)

Islam. The social and political instability characteristic the world after World War II did not fail to ha grave repercussions upon the cultural evolution of Islam 1949, especially as it was also suffering from its own trouble Thus the defeat of the Arab league in its war against Israel pr duced a sharp reaction of public opinion in Egypt, Iraq a Syria. The situation of Pakistan (*q.v.*) was seriously affect by its conflict with India over Kashmir. Soviet political activ ties created disquietude among Moslem countries. It was on at the end of 1949 that Indonesia came to an agreement wi the Netherlands. The problems of French North Africa a Eritrea continued to remain unsolved.

Further cultural progress nevertheless was achieved, especial in the sphere of public instruction and of the emancipation woman—the latter especially in Syria, the first country of t middle east to grant the franchise to women. The progress public instruction was noticeable in Pakistan, where central a provincial authorities opened some 1,500 new schools of kinds. No less interesting were the results of the cultural acti ity of the Arab league. For instance, it undertook a systemat publication of ancient Arabic manuscripts and the publicati of a bulletin dealing with the intellectual life of Arab countri All Moslem countries, especially Turkey, Egypt and Pakista sent more of their students abroad, chiefly to Great Britain a the U.S. The re-establishment in Turkey of theological educ tion in its universities contributed to the intensification religious life.

On Feb. 18–19, 1949, the 5th International Moslem co gress took place at Karachi, India, affirming once more t unity of Islam. On Sept. 11–16 the Islamic Cultural congre assembled at Tunis, Tunisia; unfortunately the restrictive mea ures taken by the French authorities prevented the Mosle from abroad being present. From Nov. 25 to Dec. 10 the fi Economic congress of all Moslem countries met at Karachi a was attended by 300 technical experts, economists and indu trialists.

In 1949 the International Islamic committee was founded Karachi. At the end of the year Chaudhury Khaliquzzama president of the All-Pakistan Muslim league, suggested the cre tion of a confederation of Moslem states under the name Islamistan, the capital of which should be in Iran. (A. Md.)

In *Mohammedanism* (Oxford, 1949) H. A. R. Gibb, profess of Arabic at the University of Oxford, gives the following es mates of the number of Moslems: Pakistan and India 90,00 000, Malaya and Indonesia 55,000,000, Arab-speaking popul tions in western Asia 15,000,000, Egypt and Sudan 17,000,0 North Africa 16,000,000, Iran 15,000,000, Afghanistan 12,00 000, Turkey 18,000,000, Asiatic U.S.S.R. and China 30,000,0 Moslem Negroes in Africa 24,000,000, Balkans and Europe U.S.S.R. 3,000,000—total 295,000,000.

Isle of Man: *see* British Empire; Great Britain & Nort ern Ireland, United Kingdom of.

Isotopes: *see* Atomic Energy.

Israel. A Jewish republic in Palestine, with undefin frontiers, was proclaimed on May 14, 1948, at T Aviv. According to a partition plan adopted on Nov. 29, 194

Left: CHAIM WEIZMANN taking his oath of office at Jerusalem, Feb. 17, 1949, to become the first president of Israel. The first regularly elected legislature of the new state was sworn in three days earlier by Weizmann in his capacity as provisional president

Left, centre: SETTLERS of a new community in western Galilee, Israel, dancing the traditional *Hora* at the founding of the town of Yazur in Feb. 1949. The festivities were also attended by Arab neighbours from a near-by village

Below, left: STUDENT NURSES watching a cornerstone being laid for a new training centre near Tel Aviv, Israel, in May 1949. The centre was to serve as a training school for children's nurses and also as an infants' home

Below: ISRAELI TROOPS on parade at Tel Aviv (later Jaffa-Tel Aviv) as the young nation celebrated Navy day in 1949

by the general assembly of the United Nations, the state of Israel was to cover 5,579 sq.mi. (with Negev); but this area was reduced to 2,124 sq.mi. (without Negev) by Count Folke Bernadotte, the U.N. mediator, in his plan dated Sept. 16, 1948. After armistices concluded with all the neighbours during 1949 the *de facto* area of Israel was estimated at about 7,800 sq.mi. According to a census of Nov. 8, 1948, this area had a population of 782,000, including 713,000 Jews; one year later the million mark was reached. Chief towns (pop. Dec. 1949 est.): Jaffa-Tel Aviv (capital, more than 300,000); Haifa (150,000). President of the republic, Chaim Weizmann (*q.v.*); prime minister, David Ben-Gurion (*q.v.*).

History.—The year 1949 was one of progress for the young state of Israel. By the beginning of 1949 the government was in control of practically the whole area over which it claimed jurisdiction with the exception of the Negev, the southern part of the country. There fighting was taking place along the Egyptian frontier in the Gaza district, and Israeli forces were actively consolidating their positions to the south and east. Egyptian opposition was rapidly overcome, and by Jan. 13 armistice talks opened at Rhodes, under the auspices of United Nations Acting Mediator Ralph Bunche.

The first general election in Israel, to a constituent assembly, was held on Jan. 25. Twelve parties competed for the 120 seats. The total number of voters was 484,000, including 39,000 non-Jews (Moslems and Christians). The result was an outright victory for the Israel Labour party, known as Mapai, which gained 46 seats. The United Workers' party or Mapam (19 seats) was second; the United Religious front (16 seats), third; and the Freedom (Herut) party (14 seats), fourth. The Communists polled 3.4% of the votes and were awarded four seats. On Feb. 17 Chaim Weizmann was elected first president of Israel.

Although it had been proclaimed that the primary task of the constituent assembly would be to adopt a constitution, the *knesset hagdola* (assembly) found itself confronted with so many and such urgent tasks that comparatively little time was devoted to this subject, but an interim or small constitution was adopted immediately before the president was elected. The most pressing task with which the government had to deal was the assimilation of the thousands of immigrants who had arrived in the country; 330,000 arrived during the period from May 15, 1948, to Nov. 15, 1949, an average of 18,300 per month.

The country's natural resources were extremely limited, and it was obliged to depend upon imports for a large proportion of its food supplies, nearly all its industrial raw materials and the majority of its manufactured goods. With the oil refineries at Haifa and the potash works on the Dead sea virtually closed down, Israel was left with its orange crop as its sole important visible export. A resulting serious inflationary situation was produced, and when Finance Minister Eliezer Kaplan introduced his budget on June 14 he stressed the importance of bringing down the cost of living, increasing production and restricting imports. Severe measures were taken to attain these objects and an austerity regime, modelled on that in Great Britain, was adopted which had the effect of holding inflation in check. When the pound sterling was devalued in September, Israel immediately followed (although it did not technically belong to the sterling area) by reducing its pound from $4.03 to $2.80 (U.S.). The economy of the country was strongly supported by world Jewry, and in addition a credit of $100,000,000 was granted by the Export-Import bank in January, and commercial agreements were negotiated with many other countries, including Great Britain.

Recognition, either *de jure* or *de facto*, which many countries had been reluctant to grant in the first months following th declaration of independence, became general for practically a the nations of the world with the exception of the Arab an most of the Moslem countries. Israel was admitted to th United Nations on May 11.

Armistice agreements were concluded with all the neighbou ing states, and relations with the Arab countries improve slightly though they were far from reaching normality. Th U.N. Conciliation commission, which was set up in Dec. 194 made many attempts to convert the armistice agreements int a peace settlement but without success. The main stumblin block in these negotiations was ostensibly the question of th Arab refugees, whom the Arab states demanded that Israe should bring back to their homes and of whom Israel declare that it could not take more than 100,000 and that this con cession was subject to the signing of a general peace settlemen In its interim report the U.N. Economic Survey Mission fo the Middle East had stated that the total number of destitut refugees was 652,000.

A question which had given rise to much discussion durin the year and on which the Vatican had expressed strong opin ions was that of the future of Jerusalem and the holy place The Conciliation commission proposed a plan which was place before the autumn session of the U.N. general assembly an envisaged a permanent international regime for Jerusalem dividing it into Arab and Jewish demilitarized zones, th boundary of which would follow approximately that suggeste in the partition resolution of Nov. 29, 1947. It was explaine that the plan did not propose a complete separation of the are from the political life and authority of the adjoining states. Th scheme was bitterly opposed by the government and people Israel and also by the kingdom of Jordan, which was equall concerned. Nevertheless, when the matter came up for dis cussion at the general assembly, an Australian-sponsored reso lution, based on this proposal but giving the suggested inte national authority even greater powers, was carried on Dec. by 38 votes to 14 with 7 abstentions. The means whereby th scheme was to be carried out was left to the Trusteeship counc to devise but not before the assembly had voted $8,000,000 f the plan. On Dec. 26 the *knesset* was moved from Tel Aviv Jerusalem. The seat of government remained, however, at T Aviv. (*See* also Egypt; Jordan; Palestine; United Nations

(D. F. K.)

Education.—Jewish education, private and public systems (1946–47 kindergartens 487, pupils 17,318, teachers 755; elementary schools 34 pupils 71,531, teachers 3,372; secondary schools 40, pupils 12,349, teac ers 747; training colleges 11, pupils 1,495, teachers 191; trade schools 3 pupils 3,993, teachers 446; religious schools 70, pupils 5,523, teache 364; schools for defectives and orphanages 9, pupils 635, teachers 8 Hebrew university (1949), students 1,500. Non-Jewish education, publ system (1948–49): elementary schools 44, pupils 6,677, teachers 14 secondary schools 1, pupils 411, teachers 11.

Finance and Banking.—Budget: (1949–50) ordinary revenue and e penditure balanced at £I41,728,000; extraordinary expenditure for d velopment purposes £I55,000,000. Bank notes in circulation (June 194 £I41,300,000; (Oct. 1948) £I28,300,000. Monetary unit: Israeli poun valued at $2.80 U.S. as of Nov. 1949.

Foreign Trade.—Imports (July–Dec. 1948) £I23,870,000. Expor (July–Dec. 1948) £I1,410,000.

Transport and Communications.—Roads (March 1949): 1,922 k Licensed motor vehicles (Dec. 1948): cars 10,500, commercial vehicl 11,800. Railways (June 1949): 403 km.; passengers carried (1948–4 382,157; freight traffic (in tons, 1948–49) 209,272. Telephones (194 19,312. Radio receiving licences (1948–49) 106,403.

Agriculture and Fisheries.—Main crops (in metric tons, 1947–48 wheat 15,500; barley 9,000; maize and durra 6,000; hay 32,000; legum 2,000; melons 7,000; straw 22,000; potatoes 31,000; fresh vegetabl 47,500; grapes 9,200; bananas 8,500; (1948) oranges and tangerin 183,000; grapefruit 36.000; lemons 9,000. Livestock (1948): catt 32,650; sheep 17,995; donkeys 2,290; mules and horses 4,591; poult 2,360,850. Fisheries: total catch (1947–48): weight 2,650 metric ton value £P1,185.000.

Industry.—Electricity (1948) 260,000,000 kw.hr. Manufactured goo (in metric tons, June–Dec. 1948): salt 4,980,000; refined oils 3,788; ma garine 3,304; soap 2,622; cement 45.326, flour 29,084; beer (in litre 3,669,748; wine (in litres) 2,441,038.

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talian Colonial Empire.

Under this heading are grouped the former four Italian prov-nces of Libya, the former military territory of Libyan Sahara, he colonies of Eritrea and the Italian Somaliland. The total rea of these territories is 918,937 sq.mi., and the total popu-ation (1948 est.), 3,192,600. Certain essential information on he composing parts of the former Italian colonial empire is iven in the table.

History.—During 1949 the fate of the former Italian colo-ies remained as an international bone of contention until late the year. Power politics were pursued in the matter with ess hesitation, but in spite of the steady support of Latin merica in the United Nations, Italy's hope of returning to frica dwindled. The main reason for this was the increase in he influence and claims of the Arabs as a whole, as also of ative African nationalism.

Because of the failure to arrive at any solution of the prob-em in Sept. 1948, the whole matter came before the political ommittee of the United Nations at Lake Success on April 6, 949. At first the great powers each put forward only a slight odification of their respective proposals of the previous utumn. The U.S.S.R., that is to say, continued to advocate Jnited Nations trusteeship for ten years as a preface to inde-endence, while France supported Italian trusteeship. On the ther hand, Great Britain and the United States wished the ritish to be the trustees in Cyrenaica at least. There was agree-ent on one point alone and that was that concessions of some ind must be made to Ethiopia in Eritrea.

At this point Ernest Bevin and Count Carlo Sforza unexpect-dly put their heads together and produced fresh proposals ccording to which the Italians were to take over the trusteeship f Tripolitania in 1951 while the British remained in Cyrenaica nd the French in the Fezzan, but the whole of Libya was to ecome independent at the end of ten years. The Italians were o be the trustees also in Somalia, and Eritrea was to be divided etween Ethiopia and the Anglo-Egyptian Sudan. The Bevin-forza proposals were rejected by one vote in the U.N. general ssembly on May 18.

While this rejection was resented in Italy the proposals them-elves raised a storm in Libya; the Moslems of Tripolitania declared that they would fight to the death rather than allow the Italians to return, and they demanded the unity as well as independence of Libya. This thirst for Libyan unity was not placated by the next British step in Cyrenaica. On June 1 the British chief administrator announced to the national congress at Bengasi that the United Kingdom agreed to the formation of a Cyrenaican government under the Emir Idris el Senussi who was thereupon invited to Britain to discuss further measures to be taken. The Emir arrived in London in July, and, after his return home, the Cyrenaican constitution was enacted on Sept. 18, and Cyrenaica became autonomous: in the future the country would manage its own internal affairs although its external relationships would remain under British control. A National congress, which had met at Tripoli in August to choose a delegation for the autumn U.N. assembly meeting, again insisted that Libya should be united as well as independent.

It was the French who were most disconcerted by the rising Arab tide, for Libyan unity would expel them from the Fezzan, and Libyan independence would disturb the already uneasy atmosphere in neighbouring Tunisia. When the United Nations met once again at Lake Success in Sept. 1949, the French were, however, left behind, while the other powers competed in a race to catch up with Libyan aspirations. The British and U.S. delegates advocated independence for Tripolitania in from three to five years, while the U.S.S.R. proposed the immediate independence of all the former Italian colonies and the evacuation of Libya by the British within three months. The Italians themselves now backed Libyan unity and supported the independence of Tripolitania where they suggested that there should be elections for a constituent assembly within six months. At the same time the Italians pressed for the unity and independence of Eritrea.

Meanwhile former Italian Somaliland, which the four powers had all but consigned to Italian trusteeship in 1948, was the scene of commotion. The African Somalis, like the Arabs in Libya, were also determined upon unity and independence; and in Aug. 1949 declarations to this effect were made by the Somali Youth league and other nationalist organizations. This would mean the union of Somalia with French and British Somaliland, a plan which the British had considered at one moment in 1948. While the U.N. political committee was debating at Lake Success a crowd of about 2,000 Somalis assembled in Mogadishu on Oct. 5 and threatened the local Italians. They were dispersed by

*Italian Colonial Empire**

Country and Area (in square miles)	Population (1948 est.)	Capital	Foreign Trade (1948, in £)	Road, Rail and Shipping (1947)	Budget (Actual 1946-47)
RIPOLITANIA 106,471†	805,960 (including 44,419 Italians)	Tripoli (pop., 1939, 108,240; including 39,096 Italians)	imp. 1,949,390 exp. 1,532,913	rds. 2,300 mi. ry. 94 mi. Ships entered at Tripoli: net registered tons 445,129	Rev.: £ 3,731,606 Exp.: £ 3,260,848
YRENAICA 330,259†	309,640 (including 77 Italians)	Bengasi (pop., 1939, 64,641; including 19,412 Italians)	imp. 1,718,835 exp. 2,146,184	rds. 3,000 mi. ry. 56 mi. Ships entered at Bengasi and Tobruk: net registered tons 283,000	Rev.: £ 1,133,336 Exp.: £ 1,469,057
RITREA 45,754‡	1,087,000 (including 25,491 Italians)	Asmara (pop., 1939, 85,000; including 50,000 Italians)	imp. 3,017,000 exp. 1,869,000	rds. 780 mi. ry. 192 mi. Ships entered at Massawa: net registered tons 550,073	Rev.: £ 2,555,904 Exp.: £ 2,556,590
OMALILAND, ITALIAN 194,000‡	940,000 (including 2,600 Italians)	Mogadishu (pop., 1939, 55,000; including 8,000 Italians)	imp. 1,113,400 exp. 180,500	rds. 5,300 mi. ry. nil	Rev.: £ 1,260,889 Exp.: £ 1,523,068

*The political units listed were in 1949 under British trusteeship pending ultimate decision by the United Nations assembly concerning disposal of the pre-1940 Italian colonial empire.

†In 1934 Libya was divided into four provinces. By a decree of Jan. 9, 1939, these provinces (213,821 sq.mi.) were incorporated in the national territory of Italy. The territory of byan Sahara (465,362 sq.mi.) was not affected by this decree. Under British military administration Libya was divided into Tripolitania (provinces of Tripoli and Misurata) and Cyrenaica rovinces of Bengasi and Derna, and the eastern part of Libyan Sahara). The western part of Libyan Sahara (Fezzan) was divided between British and French military administrations 23,153 and 19,300 sq.mi. respectively; total pop. c. 50,000).

‡The areas given here are those before the annexation of Ethiopia by Italy. A decree of June 1, 1936, established the colony of Italian East Africa comprising Ethiopia, Eritrea and lian Somaliland. The greater Eritrea (86,166 sq.mi.) included three northern provinces of Ethiopia, and the Ethiopian Ogaden was assigned to the greater Somaliland (270,972 .mi.). These new Italian colonies ceased to exist with the liberation of Ethiopia in 1941, but until Aug. 1948 Ogaden remained under British military administration.

order of the British military authorities; two rioters were killed and three died of wounds, and a British officer and six native constables were injured.

On Nov. 12 the U.N. political committee accepted the drafting committee's proposals on all the former Italian colonies, and on Nov. 21 the general assembly agreed to them en bloc. Thus at last it was settled that:

1. A unified Libya should become independent by Jan. 1, 1952; in the interim period administration was to be carried on by a U.N. commissioner with an advisory council of the representatives of Egypt, France, Italy, Pakistan, the U.K. and the U.S. and four representatives of the local population.

2. Somalia, former Italian Somaliland, was to come under Italian trusteeship with a three-power advisory council (Colombia, Egypt and the Philippines) for ten years and during that period be prepared for independence.

Only in the case of Eritrea was a decision once more postponed for a year in order that a U.N. commission of enquiry might once again attempt to ascertain the wishes of the Eritrean peoples. (E. Wi.)

Italian Literature.

In contrast with the ferment of the preceding few years, the production of Italian writers showed a decisive trend toward consolidation and clarification in 1949. The literary experiments in Marxism and neorealism, veering from extremisms, achieved a certain equilibrium. War experiences were transmuted into a meditated lyrical form which retained a touch of human kindness and sympathy for man's suffering peculiar to postfascist literature. There was an impressive effort by new young writers to explore the tortured bewilderment of their generation living, after the holocaust that they had considered a war of liberation in the political, social and moral sense, in a world which had inherited the defects and injustices of prewar society. It was this restlessness and search for new values which made Italian literature of 1949 lively, and which explained in some measure the awarding of Italy's most conspicuous literary prize (Viareggio) to the Liberal Catholic Arturo Carlo Jèmolo for his historical treatise on the problem of relations between church and state.

Several first novels won wide critical acclaim: Renata Viganò's *L'Agnese va a morire* (co-winner of the Viareggio second prize), a notable though uneven work about a woman partisan; Guglielmo Petroni's *Il mondo è una prigione*, an objective but moving account of life under the German occupation; Nello Sáito's *Maria e i soldati*, a vigorous study of the effects of war on human relations; and Italo Calvino's *Ultimo viene il corvo*, a striking collection of short stories, with surrealist overtones, about partisan warfare. The military and political collapse of 1944 and the moral abyss into which the people sank during the following months received dramatic treatment in two fast-moving, documentary-type novels: *In principio era l'odio* by Mario Vicentini, and *Uomini nel canneto* by Vincenzo Filipponi. The most widely read works of fiction were Vitaliano Brancati's *Il bell'Antonio* and Alba de Céspedes' *Dalla parte di lei*. Both novels, significantly enough, made skilful use of the war as a backdrop for the study of marital problems, the former portraying with a Pirandellian palette a man unfit to love, the latter describing the hopes and disillusionments that lead a wife to kill her husband. The problem of whether a nazi and a fascist can be redeemed if given a chance was treated brilliantly and affirmatively by Elio Vittorini in *Le donne di Messina*, and poorly and negatively by Vasco Pratolini in *Un eroe del nostro tempo*.

The havoc of war on the mental and moral fibre of men was analyzed by two distinguished writers, Cesare Pavese in *Prima che il gallo canti*, and Enrico Pea in *Zitina*, and by three new writers, Manlio Magini (*Morte dell'adolescenza*), Dante Arful (*I superflui*, Venice prize) and Ugo Moretti (*Vento caldo*, Ver silia fiction prize).

An oasis of peace and quiet and a retrospective view were offered war-weary readers by such veterans as Enrico Pea (*Vita in Egitto*), winner of the St. Vincent prose prize, G. B. Angio letti (*La memoria*), Dario Ortolani (*Il lido dei maschi*) and Leonardo Sinisgalli (*Belliboschi*). Provincial life was exhumed by Augusto Monti (*Tradimento e fedeltà*), Armando Meon (*L'ombra dei vivi*, Prato prize) and Michele Prisco (*La pro vincia addormentata*). Alberto Moravia contributed an excel lent collection of short stories (*L'amore coniugale*).

The theatre, despite prizes and the commendable efforts o four major literary figures (Bontempelli, Bacchelli, Savinio and Alvaro), rated no outstanding works.

Numerous books of poetry were printed as usual but few reaped the pecuniary laurels of the year. The Versilia poetry prize was shared by Biagio Zagarrio (*Sereno*) and Libero de Libero (*Banchetto*), who also won half of the Viareggio second prize, while Camillo Sbarbaro (*Trucioli*) received the St. Vin cent poetry prize. (M. F. C.)

Italian Possessions in Africa: *see* ITALIAN COLONIAL EM PIRE.

Italy.

A republic of southern Europe, bounded on land by France to the northwest, by Switzerland and Austria to the north and by Yugoslavia to the northeast. The country includes not only the whole of the Apennine peninsula, but also the large Mediterranean islands of Sicily and Sardinia as well as a number of smaller islands. Area: 116,235 sq.mi excluding Venezia Giulia, Zara and the islands (2,843 sq.mi. ceded to Yugoslavia, the five small areas in the Alps ceded to France (397 sq.mi.) and the Free Territory of Trieste (*q.v.*) Pop.: (April 21, 1936, census) 42,993,602; (mid-1948 est. 45,706,000. Language: mainly Italian. Religion: mainly Roman Catholic. Chief towns (pop., Jan. 1, 1948, est.): Rome (capi tal, 1,613,660); Milan (1,277,013); Naples (995,257); Turin (719,528); Genoa (657,634); Palermo (470,780); Florence (377,203); Bologna (329,964); Venice (308,677). President in 1949: Luigi Einaudi; prime minister: Alcide de Gasperi (*q.v.*)

History.—During 1949 the predominantly Christian Demo cratic government led by Alcide de Gasperi continued in office The smaller groups it contained—Liberals (meaning a small strongly conservative party), Republicans and moderate Social ists—all being anticlerical, criticized cabinet policy fairly openly The moderate Socialists, led by Giuseppe Saragat, who was dep uty prime minister and minister of the mercantile marine, were constantly on the verge of resigning. On Oct. 31 they made u their minds to do so, because the other anti-Communist Socialis groups might be readier to try to reunite the Socialist party i the *Saragatiani* were not actually members of a clerical admin istration. On Nov. 7, De Gasperi deputed their posts temporaril to other ministers, evidently not taking the resignations ver seriously. By the end of the year there were still no signs o a real reunion between the Saragat Socialists and the Socialis followers of Giuseppe Romita and of Ignazio Silone, so that th traditional Socialist party remained divided and impotent.

When the Christian Democratic party conference was hel at Venice at the beginning of June, one of its favourite topic of discussion proved to be a demand that the government coal tion should be replaced by a homogeneous cabinet which, it wa claimed, would be able to make a clearer appeal to the publi De Gasperi, however, continued on his way, and in the next fe months the position of the government appeared to be consol dated by a number of factors. For instance the cabinet showe considerable activity in the way of putting forward projects for fiscal and tariff reform, for the revision of social legislation and for the restriction of the right to strike. The housing plans of the minister of labour, Amintore Fanfani, began slowly to materialize, and in the chamber of deputies in September he was able to state that 20,000,000,000 lire had been invested in housing for workers and that more was to follow.

Communism and Trade Unions.—In the course of the summer, irritation and fatigue, because of Communist agitation, combined with fear of the police and fear of unemployment, reduced Communist influence very considerably in the industrial north of Italy. On July 13 the papal threat of excommunication against communism made a further contribution to this tendency (*see* ROMAN CATHOLIC CHURCH). The disruption of the Communist-dominated C.G.I.L. (*Confederazione Generale Italiana del Lavaro,* or General Confederation of Labour), which had begun with the establishment of the "free" or Catholic L.C.G.I.L. (*Libera Confederazione Generale Italiana dei Lavoratori*) in Sept. 1948, continued; and in June 1949 the Republican and anti-Communist Socialist labour groups also broke away to form the Italian Federation of Labour (F.I.L.). At the national conference of the C.G.I.L. at Genoa early in October its secretary general, Giuseppe di Vittorio, admitted membership losses in the north, and since June 1947 the loss of about 800,000 members altogether, but at the same time he claimed that the C.G.I.L. had gained sufficient ground in other parts of the country to keep its membership figure up to 5,000,000. When the L.C.G.I.L. congress was held in Rome early in Nov. 1949, its secretary general, Giulio Pastore, claimed a membership already reaching 1,300,000.

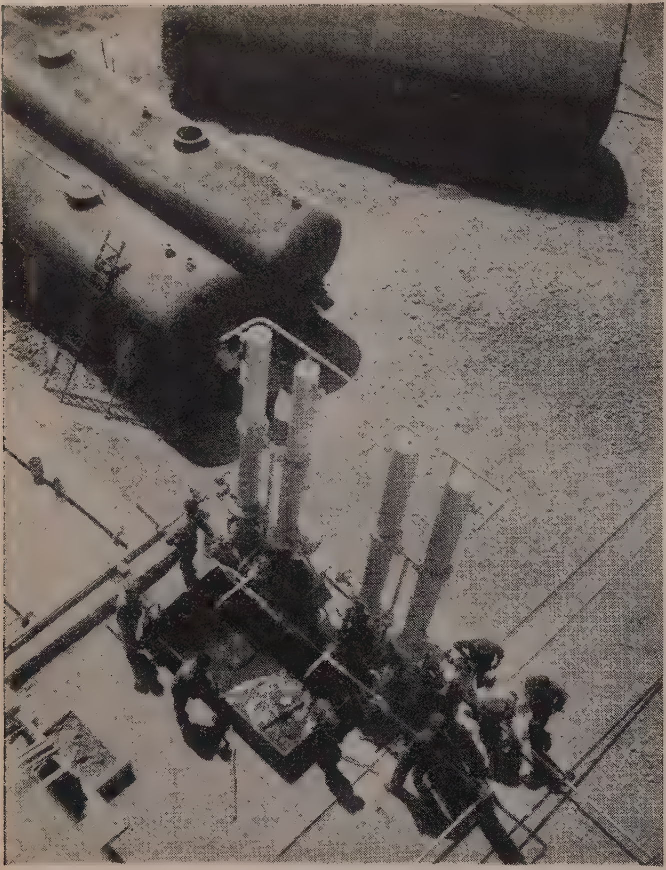
Peasant Movement.—While Communist influence was weakening, particularly among the highly skilled workmen of the northern industrial triangle, it remained fairly steady in central Italy, where many peasants were prosperous and agricultural industries flourished; at the same time it continued to grow in the very poor districts of southern Italy, which had never been industrialized and where it was scarcely known before 1948.

On Easter Sunday (April 17), after many vague promises, De Gasperi gave an interview to the press in which he outlined a specific plan for land reform. The plan proposed that nearly 8,000 owners of big landed properties should be compelled to sell portions of their land varying from a fifth to a half. Only the most profitable land, not the largest, most neglected estates, was, it seemed, to be affected. The land liberated in this way was to form a land pool out of which small peasants and labourers were to be supplied. This project was not well received, and the months dragged on and nothing further developed. The long drought, followed by floods and devastation in the autumn, brought great suffering, especially in the south, and at the end of October there were clashes near Crotone in Calabria between the police and unarmed peasants who had squatted on the land. (In 1944 a decree had permitted squatting in neglected land, although more recently squatters had frequently been punished.) Public opinion reacted strongly in favour of the peasants, and on Nov. 20 and 21 De Gasperi toured Calabria where no Italian prime minister had ever been. The peasants' co-operatives were promised some of the land they claimed, and money for improvements was guaranteed. Similar disturbances took place in Sicily and at the end of November in the San Severo wine-growing district of Apulia.

Improved Economic Position.—While agrarian unemployment was increasing there was some improvement with regard to industrial unemployment in the summer of 1949. Though in a country crammed with unregistered workers, small industries and casual seasonal employment, statistics could easily mislead, at the end of July 1949 there were nearly 470,000 less registered unemployed than at the end of July 1948, while about 200,000 more people had come on to the labour market as the population grew; there were also about 100,000 Italians whose contracts in Switzerland had been ended. Internal prices continued fairly stable during 1949, and in September, thanks in part to the excellent grain harvest, it was possible to announce an average 10% reduction in the price of bread from the middle of October.

The financial policy of the government continued to be very cautious though in the spring a little more play was allowed by a reduction of the official rate of discount from 5½% to 4½%. Exports reached their highest postwar level during the first six months of 1949, and the adverse balance of trade was at times eliminated. After June things became more difficult, partly because of the contraction of the world market. The problem of the constantly increasing sterling balance in Italy, which had reached the figure of £70,000,000 by September, was sharpened by sterling devaluation which practically meant a partial British default. But the Italian government had been fortunate in the acquisition of a considerable quantity of gold in the U.S. before Sept. 18, and this, of course, rose in value. The lira was left to find its own value as against the dollar and steadied at a rate which implied a devaluation of not quite 10%. The outlook for exports had, however, darkened very seriously by the end of the year. A basic reason for this was the excessive cost of industrial manpower; and this was due, as much as to anything, to the short-sightedness of the Italian industrialists who had spent their postwar profits heedlessly, making no attempt to replace worn-out plants or to expand their

ITALIANS demonstrating in Rome against the import of American-made motion pictures as causing widespread unemployment in the Italian film industry in 1949



OIL REFINERY which went into operation near Milan, Italy, in 1949, following the discovery of large oil deposits 50 mi. southeast of Milan by the General Italian Petroleum Corp., a government-controlled company

industrial potentialities.

In so far as Italy's storms were weathered in 1949, the chief factor undoubtedly was the supply of Marshall aid, and the news that the 1949–50 allocation was to reach only $407,000,000 was unwillingly received. It should be added that the reconstruction of Italy's mercantile marine with the consequent reduction of the charges for freight had made a far from negligible contribution to the country's economic health.

One promising event for Italy's economic future, though its effects were scarcely felt by the end of 1949, was the discovery in June of oil at a small Emilian town called Cortemaggiore just south of the Po. More immediately important, because upon a larger scale, was the organization of the natural gas around Ferrara and at Lodi near Milan.

Foreign Policy.—There was no change in Italian foreign policy in 1949. The foreign minister, Count Sforza, followed up Tito's difficulties with Moscow by friendly expressions and the extension of commercial relations with Yugoslavia. In August he led the Italian delegation to the Council of Europe at Strasbourg, France, while a good deal of sympathy was felt in Italy for drawing closer its ties with the other countries of western Europe. A considerable section of the Italian press continued, especially after the abortive Bevin-Sforza proposals and until after the Mogadishu incident in October (*see* ITALIAN COLONIAL EMPIRE), to attack Great Britain as the obstacle in Italy's colonial path. It also criticized British behaviour in the matter of European co-operation, particularly after the devaluation of sterling. Economically Italy continued to lean heavily upon the United States. The Franco-Italian customs union did not bear much fruit because the two countries' production was so much the same.

Education.—(1946–47) Elementary schools 37,131, pupils 4,703,228, teachers 144,815; secondary schools 5,799, pupils 894,037, teachers 82,673; technical schools 957, pupils 134,969, teachers 13,721; universities and institutions of higher education 27, students 180,134, professor and lecturers 8,625. Illiteracy (1931) 21.6%.

Finance and Banking.—Budget: (1948–49) revenue 800,752,000,00 lire; expenditure 1,251,756,000,000 lire; (1949–50) revenue 1,222,783, 000,000 lire; expenditure 1,396,915,000,000 lire. National internal deb (March 1949): 2,014,573,000,000 lire. Currency circulation (Au 1949): 882,700,000,000 lire. Gold reserve (Aug. 1949): $134,000,00 U.S. Bank deposits (March 1949): 1,099,000,000,000 lire. Monetar unit: lira, with an exchange rate (Dec. 1949) of 624 lire to $1 U.S.

Foreign Trade.—(1948) Imports: 847,200,000,000 lire; exports: 570, 000,000,000 lire.

Transport and Communications.—Roads (1948): 105,800 mi. License motor vehicles (Dec. 1948): cars, 206,773; commercial vehicles, 211,636 Railways (1948): 13,000 mi.; passenger-miles 13,260,000,000; freigh carried, 37,000,000 tons. Shipping (July 1948): number of merchan vessels of 100 tons and upward, 852; total tonnage, 2,109,067. Ai transport (1948): miles flown, 5,348,600; passengers flown, 190,640 cargo carried, 1,568,000 tons; air mail carried, 189,000 tons. Telephone (1947–48): subscribers, 751,900.

Agriculture and Fisheries.—Main crops (in metric tons, 1948): whea 6,136,000; maize 2,254,000; barley 230,000; oats 483,000; rye 122,000 rice 619,000; potatoes 3,014,000; sugar, raw, 397,000; hemp 76,80 Livestock (1948): cattle, 7,923,000; sheep 9,434,000; pigs 3,757,000 horses 720,000; poultry 65,000,000. Fisheries: total catch (1948) 113,476 metric tons.

Industry.—Fuel and power (in metric tons, 1948): coal 972,000; lignit 907,000; natural gas 117,000,000 cu.m.; manufactured gas 1,524,000,00 cu.m.; electricity 22,692,000,000 kw.hr.; crude oil (in metric tons) 9,20 Raw materials (in metric tons 1948): iron ore, metal content 543,000 pig iron 526,000; steel ingots and castings 2,124,000; lead 26,800; zin 26,400.

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(E. WI.)

Ivory Coast: *see* FRENCH UNION.

Jamaica.

A British colony consisting of the largest of th British West Indian islands. Area: 4,765 sq.m Pop. (1948 est.): 1,364,000, mainly of African descent. De pendencies: Cayman Islands and Turks and Caicos Islands Chief towns: Kingston (cap., census 1943, 109,056); Spanis Town (12,028); Montego Bay (11,500). Governor, 1949: S John Huggins.

History.—The constitution, introduced in Nov. 1944, for five-year trial period, became due for review during 1949. Th house of representatives agreed on these proposals: the execu tive council should consist of one official, two nominated an eight elected members; the legislative council should not b permitted to hold up legislation for more than six months; an a candidate for the house of representatives should be able t stand for any constituency in the island. The last proposal wa immediately accepted and brought into force; the other re mained subject to consideration. A general election was fixe for Dec. 20.

In February the government passed the Pioneer Industrie (encouragement) law, granting substantial concessions in regar to exemption from income tax, tonnage tax and customs dut in connection with the establishment of new industries. Ther was a flood of industrial and other economic development. Th shares of a £1,200,000 Caribbean Cement company were issued construction of the factory was due to start at an early dat and production was scheduled to commence by the beginning 1951. The West Indian Sugar company's new factory at Mony musk, one of the largest in the British commonwealth, bega operations in April. Plans for an industrial estate in wester Kingston were well under way.

Jamaica Welfare, Ltd., which, since its foundation in 193 had done much valuable welfare work, was wound up an handed over to a new Social Welfare commission with a civ servant as chairman.

Finance and Trade.—Currency: pound sterling. Budget (1949–50 est. revenue £10,314,313; expenditure £10,307,275. Foreign trade (1948 imports £19,680,859; exports £11,387,350. Principal exports: suga bananas, rum, cigar tobacco and cocoa. The 1949 sugar crop totall 237,749 tons, or approximately three times the average prewar cro The rapidly developing tourist trade contributed largely to invisib

ports, and Tower Isle, the latest luxury hotel, opened in January.
(Jo. A. Hn.)

apan. An island nation located in the western Pacific, Japan has been under Allied occupation since its defeat and rrender in 1945. In accordance with the Cairo and Potsdam eclarations, Japan was stripped of its former overseas posses-ons and reduced to the four main islands of Honshu, Kyushu, hikoku and Hokkaido (total area 146,690 sq.mi.) and minor ljacent islands. Total population (est. Sept. 1, 1949) 82,466,-31. Chief cities (1946 pop.): Tokyo (capital) (3,442,106); saka (1,293,501); Kyoto (914,655); Nagoya (719,382); Yoko-ma (706,557); Kobe (443,844). Emperor: Hirohito. Prime inister: Shigeru Yoshida. Principal religions: Buddhism, Shin-ism.

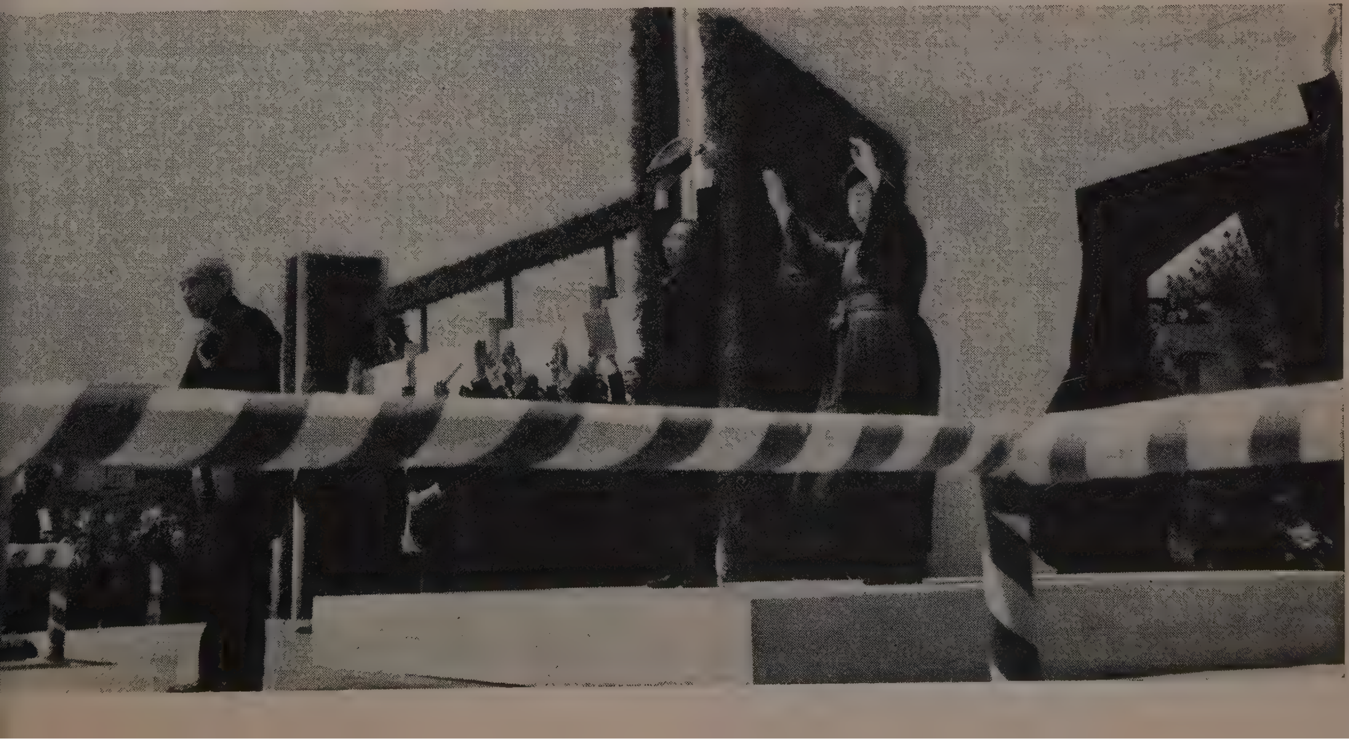
History.—*Inter-Allied Policies.*—Throughout 1949 Japan con-nued under Allied military occupation, with Gen. Douglas acArthur as the supreme commander in Tokyo, the Far East-n commission (F.E.C.) as the policy-making body in Wash-gton and the Allied Council for Japan in an advisory role in okyo. On Nov. 17 Burma and Pakistan were added to the 11 embers previously constituting the Far Eastern commission. axwell M. Hamilton replaced Gen. Frank R. McCoy as the S. representative and was elected chairman on Dec. 8. New cupation directives approved by the commission during the ear included, *inter alia:* principles of agrarian reform in Japan; policy for a Japanese patent system; a decision that no more panese leaders should be tried on charges of waging a war of gression. (*See* also War Crimes.)

Inter-Allied negotiations looking to the conclusion of a peace eaty remained deadlocked over questions of procedure. The nited States, with the support of several other powers, pro-osed that all members of the F.E.C. participate in the settle-ent. The Soviet Union insisted on a preliminary negotiation major issues by the Big Four, *i.e.,* the United States, the oviet Union, the United Kingdom and China. Meanwhile U.S. licies in Japan were denounced as antidemocratic and im-rialistic by soviet representatives on the F.E.C. and the Allied ouncil. They were defended by the U.S. authorities as fully nsistent with basic occupation objectives of disarmament and democratic reform. The Soviet Union was accused in turn with failure to live up to its Potsdam pledge to repatriate all Japanese prisoners of war. About 95,000 were reported shipped back to Japan in 1949. In May the Russians had stated that this number would complete their repatriation program, but Japanese records showed 377,000 still unaccounted for in soviet areas. The United States pressed for an impartial investigation. Lieut. Gen. Kuzma Derevyanko, Soviet representative on the Allied council in Tokyo, walked out of the meeting of Dec. 21 when the question was placed on the agenda.

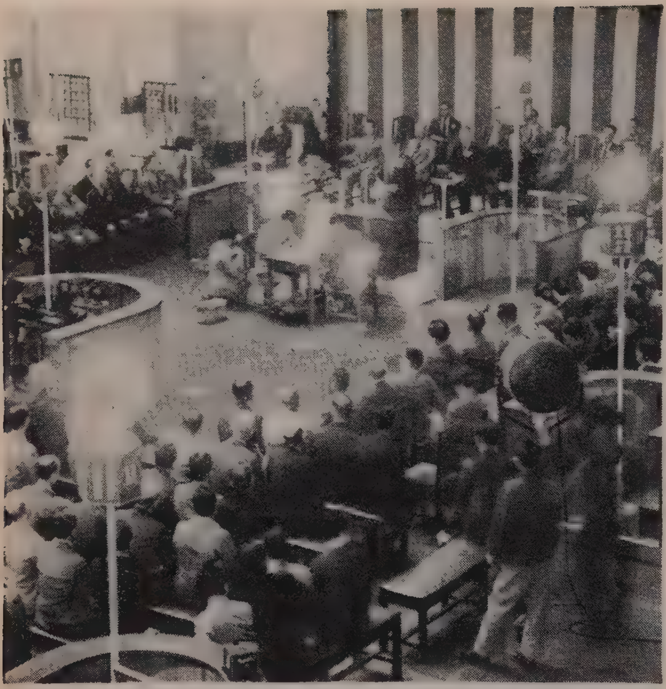
The United States retained the preponderant position in administering occupation policies within the framework of the F.E.C.'s basic post-surrender policy for Japan. Except for a token British commonwealth force, the occupation troops remained wholly American, comprising four infantry divisions plus the far east air force. Civilian relief supplies furnished by the U.S. armed forces to Japan (including Okinawa) totalled $410,000,000 in the year ending June 30, 1949. They had amounted to $1,265,000,000 in the four years since V-J day.

A move to grant the Japanese greater autonomy in managing their own affairs was evidenced in August when General MacArthur announced the reduction of military government supervision of civilian affairs at the prefectural and local levels. In the economic realm, however, the year was marked by tightened pressure on the Japanese government to retrench its finances and revive production and exports. A Washington directive of Dec. 1948, called on the supreme commander to "direct the Japanese government to carry out an effective economic stabilization program." Subsequently, detailed proposals for balancing the budget, reforming the tax structure and stabilizing prices and wages were put forward by the U.S. authorities. The latter also made clear their opposition to labour strikes disrupting key industries.

The emphasis in occupation policy thus shifted toward economic recovery, and away from the punitive and reform measures of earlier years. In May the United States unilaterally halted interim reparations deliveries of industrial equipment to China and other Pacific nations. As the F.E.C. was still unable to agree on a final reparations program, and the United States increasingly concerned to conserve Japanese assets for recovery, the prospect of any further deliveries seemed remote. (*See* also



IPEROR HIROHITO and Empress Nagako joined the cheering in May 1949 Japanese celebrated the second anniversary of the adoption of the current tional constitution



TOKYO STOCK EXCHANGE reopened under revised laws in May 1949, for its first session since Sept. 1945. Authorization was given by Gen. Douglas MacArthur as a move toward normalizing Japanese economy

Reparations.) In August it was announced that the program to break up excessive concentrations of economic power in Japan was virtually completed. This suggested that the original aims had been scaled down considerably. The agrarian reform meanwhile moved into its final stage. More than 5,000,000 ac. of farm land had been purchased from former owners and resold to small farmers, while rent ceilings and written contracts had been instituted on the 10% of Japan's cultivated area still farmed by tenants.

Domestic Affairs.—The Democratic Liberal party, headed by Shigeru Yoshida, won a sweeping victory in the national diet elections of Jan. 23. Campaigning on a platform of "free enterprise" and anticommunism, Japan's right-wing party gained a working majority of 264 out of 466 seats in the house of representatives. Premier Yoshida thus continued in office through the year. The centre parties, the Democrats and Social Democrats, suffered heavily from the corruption and internecine strife revealed in their earlier coalition governments. In the 1949 elections they dropped to 68 and 49 seats respectively. Symptomatic of the polarization taking place in Japanese politics, the Communists showed a marked accession of strength, increasing their seats from 4 to 35.

Despite the general swing to the right, and the lesser drift from the centre to the left, no stable pattern of political parties had yet emerged in postwar Japan. Premier Yoshida, spokesman of the old-line bureaucracy and large business interests, continued his efforts to draw the Democratic party into a merger which would create an ultraconservative bloc of preponderant strength.

On the left also there were manoeuvres to form some more stable coalition. The Communist party campaigned vigorously against the policies of the Yoshida government, especially in the labour field. They also attracted support by their overtly nationalist and antioccupation propaganda. Toward the close of the year, however, it appeared that they had lost ground in their stronghold, the trade unions. Anti-Communist "democratization leagues" had drawn large numbers of workers away from Communist leadership, and the latter's attempt to stage a strong labour offensive against the government proved ineffectual. Communist influence among Japan's 2,500,000 employees in government offices and enterprises was also weakened by the purging of many party members and sympathizers in the course of the government's campaign to dismiss surplus employees from its payrolls. The strongest organized force in Japanese politics continued to be the conservative bureaucracy allied at various points with business interests and commanding strong support in rural regions. Only the presence of Allied authority prevented a sharper and perhaps more violent clash between the right and left.

National politics in Japan continued to be dominated by the issues of economic stabilization and reconstruction. Under insistent pressure from Allied headquarters, the diet approved Japan's first balanced budget since 1930. A series of Allied directives brought a sharp reduction in government subsidies the suspension of deficit loans from the Reconstruction Finance bank, large-scale dismissals of public employees, slashes in public investment, the relaxation of commodity controls and far-reaching plans for tax reform. On April 25 the yen was officially pegged at 360 to the dollar, as a further step in the return to trade normalcy. Agricultural harvests were good, and industrial output increased 46% from January to October.

Late in the year the authorities announced that monetary stabilization had been achieved. Symptomatic was the marked decline in the black market, and the stability of prices and wages through 1949. It appeared, indeed, that the problem of inflation might be superseded by deflationary pressures. Business complained increasingly that the austerity program had brought about a crippling shortage of funds and mounting stockpiles. This was accentuated by the lag in making available counterpart funds—the yen proceeds of U.S. relief funds—to finance industrial expansion. Labour unrest was widespread especially over the dismissal of some 200,000 public employees and the government's policy of no wage increases. The Japanese economy, moreover, still continued to be heavily dependent upon U.S. aid. Exports failed by a wide margin to cover import requirements of food and raw materials, even though living standards remained far below prewar levels. The "balanced economy" projected for 1953 by the Economic Rehabilitation Planning commission called for exports of $1,500, 000,000 to support a standard of living 10% below that of 1930-34. This was three times the actual level of exports in the year ending June 1949.

Finance.—National government expenditures (general account) were budgeted for 1949–50 at 704,600,000,000 yen. This was 231,500,000,000 yen above the previous year, and came to 26.7% of estimated national income. The principal items were 202,200,000,000 yen for price adjustment (subsidies) and 129,600,000,000 for war-termination expenses (chiefly occupation costs). Revenues were budgeted at 704,900,000,000 yen, of which 514,600,000,000 was to come from taxes and stamp revenues and 121,000,000,000 from government monopoly profits. The Bank of Japan's outstanding note issue declined from 355,300,000,000 yen at the end of 1948 to 298,200,000,000 on Sept. 30, 1949. Meanwhile the bank's holdings of government debt (including Reconstruction Finance bank bonds) dropped from 332,500,000,000 to 237,400,000,000 yen. Total sight and time deposits of all other banks rose from 463,700,000,000 yen on Dec. 31, 1948, to 600,700,000,000 on Aug. 31, 1949. On the latter date the national debt was 518,400,000,000 yen. The gradual tapering off of price inflation is shown in the following indices (1937 100):

	Wholesale Prices	Cost of Living in 28 Cities	Daily Earnin of Mo in Man facturi
1947	3,720	4,470	3,2
1948	9,850	8,643	8,8
1949			
January	14,700	11,100	15,60
August	16,200	12,000	16,20

Trade and Transport.—Japanese foreign trade was again characterized 1949 by a heavy import deficit, financed by U.S.-appropriated funds. Plans for 1949–50 called for exports of $520,000,000 as against imports of $820,000,000. Actual exports increased substantially during 1949, but failed by a wide margin to cover import requirements of food, cotton and other materials. The figures were as follows (in millions of dollars):

	1947	1948	Jan.-Oct., 1949
Imports, c.i.f..	526.1	682.6	780.2
Exports, f.o.b.	173.6	258.3	433.2

The United States provided 65% of Japan's 1948 imports, of which grain and flour comprised 23%, sugar 12%, raw cotton and wool 17% and fertilizer 6%. Exports went mainly to sterling and other non-dollar areas, the U.S. taking only 25%. Cotton manufactures accounted for 38% of 1948 exports, raw silk 9% and other textiles 12%. In terms of quantity, imports were only 40% of the 1930–34 level and exports 16%. The revival of private trade and the replacement of multiple-exchange rates by a single official rate (360 yen to the dollar on permissible transactions), brought a gradual readjustment of Japan's cost-price structure to the world economy. Trade agreements were signed with a number of countries, including a £143,000,000 agreement with the sterling area in November. However, the austerity program created a shortage of working capital in Japanese industry, and exporters likewise felt the pressure of sagging world prices and the devaluation of sterling and other currencies. At the end of the year, as export contracts lagged, unsold stocks of export goods were reported to have reached 80,000,000,000 yen. Japanese officials and businessmen displayed keen interest in the resumption of trade relations with China, Japan's once important market now controlled by a Communist government.

Railway traffic in Japan was as follows in 1948 (monthly average): passenger-kilometers, 6,590,000,000; freight ton-kilometers, 2,109,000,000; freight tons, 9,638,000. Corresponding monthly averages for January-July 1949 were 5,841,000,000, 2,200,000,000 and 9,626,000 respectively. Japan's merchant fleet remained far below prewar standards. In Oct. 1949 the country had only 1,654,178 gross tons of steel vessels of 100 gross tons or over. Only 66 vessels of 405,000 tons could be used in overseas trade.

Food and Agriculture.—Some improvement in Japan's food position was achieved in 1949. The index of agricultural production (1934–38=100) was 83 in 1947–48 and 95 in 1948–49. For the fourth postwar year, however, Japan was unable to provide sufficient food from its own resources for its expanded population, or to assure equitable distribution to the cities. Food imports totalled 2,489,000 metric tons in the year ending June 1949, and were expected to equal if not exceed this figure in fiscal 1950. Production of rice and rice substitutes was as follows in the calendar years 1948 and 1949:

	1948		1949 (prelim.)
	Area (hectares)	Production (metric tons)	Production (metric tons)
Rice	3,150,000	11,632,000	11,474,000
Wheat	680,000	1,042,000	1,064,000
Barley	903,000	1,569,000	1,667,000
Potatoes	226,000 (1949)	2,178,000	—

High food prices remained a major problem for urban workers, who were still forced to devote 60% of their total family expenditure to food. By the end of the year, average national consumption was put at about 2,000 cal. per person daily. But the official ration supplied only 1,348 cal., and the remainder had to be purchased in the open market where costs ran two to three times the official prices. With heavy food imports still financed by U.S. funds, Allied headquarters turned down the request of the Japanese government to raise the basic rice ration above 2.7 *go* (.88 dry pts.).

Manufacturing and Mining.—Industrial activity in Japan climbed steadily from November 1946 to March 1949. Thereafter it showed a tendency to level off, reflecting deflationary pressures in domestic and export markets. By Sept. 1949 the index of industrial output stood at 53% of the 1937 level, a rise of 40% from the 1948 average. Based on 1932–36 as 100, the September indices were as follows: general industrial activity, 93.2; utilities, 164.1; mining 106.2; manufacturing, 75.3; machinery, 111.7; metals, 87.6; chemicals, 77.4; textiles, 25.5. Employment in Japanese industry, transport and the service trades was estimated in Aug. 1949 to be about the same as Oct. 1947. Manufacturing employment was down 22%, however, and real wages were hardly more than 50% of prewar levels. This situation bred continuing discontent and unrest among Japanese workers, about 6,700,000 of whom were organized in trade unions.

Industrial Production

Monthly Average	1947	1948	1949 (Jan.–Oct.)
Coal (1,000 metric tons)	2,270	2,810	3,148
Crude petroleum (metric tons)	15,500	13,600	16,200
Gas (1,000 cubic meters)	49,000	68,500	74,860
Electricity (million kw.hr.)	2,461	2,802	2,964
Pig iron (1,000 metric tons)	31	70	127
Steel ingots & castings (1,000 metric tons)	78	143	246
Refined copper (metric tons)	3,070	4,530	6,126
Cement (1,000 metric tons)	103	154	259
Motor vehicles (units)	930	1,670	2,365
Cotton yarn (metric tons)	10,200	10,200	12,710
Rayon staple fiber (metric tons)	730	1,330	2,038
Woven cotton fabrics (1,000 sq. meters)	46,200	64,400	67,030
Wheat flour (1,000 metric tons)	66	84	153
Raw silk (bales of 132 lbs.)	9,295	11,248	13,524*

*Jan.–Sept.

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(W. W. L.)

Java: *see* NETHERLANDS OVERSEAS TERRITORIES.

Javelin Throw: *see* TRACK AND FIELD SPORTS.

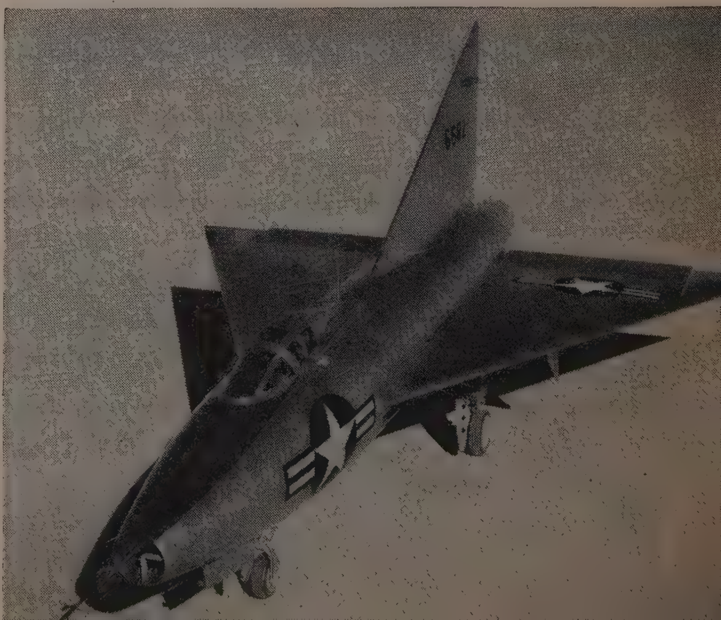
Jessup, Philip C.

(1897–), U.S. government official, was born in New York city on Jan. 5. He attended Hamilton college, Clinton, N.Y., Yale university and Columbia university, where he received his doctor's degree in 1927. That same year he was admitted to the New York bar. He taught international law at Columbia, becoming Hamilton Fish professor of international law and diplomacy in 1946. He held numerous private and governmental appointments in the field of international law, serving, for example, in 1929 as assistant to Elihu Root at the Conference of Jurists on the Permanent Court of International Justice at Geneva and as lecturer at the Academy of International Law in The Hague, Netherlands. From 1942 to 1944 he was assistant director of the Naval School of Military Government and Administration, and at the same time lectured in a similar school for the army. He held executive positions with the United Nations Relief and Rehabilitation administration (1943) and the U.N. Monetary and Finance conference at Bretton Woods, N.H. (1944). On Jan. 3, 1948, President Truman named him deputy representative of the U.S. on the "Little Assembly" of the U.N. general assembly, in May made him deputy to the U.S. delegate on the U.N. Security council, and in December gave him the personal rank of ambassador.

On Jan. 11, 1949, Jessup told the U.N. Security council that the Dutch invasion of Indonesia was in disregard of council orders, and demanded that the Dutch remove their armies from the republic and set up a procedure for transfer of sovereignty to a United States of Indonesia. On Feb. 10 he was given a new position as ambassador-at-large to represent the U.S. at major international conferences and special U.N. meetings. He represented the U.S. in initial discussions that ended the Russian blockade of Berlin. He was one of the U.S. advisers at the meeting of foreign ministers in Paris in May; and he was appointed in July to direct a review of U.S. diplomatic policy toward the far east.

Jet Propulsion.

The outstanding event in the field of jet propulsion during 1949 was the flight of the De Havilland Comet, the world's first commercial jet air liner. Other notable items included the flight of the English



THE CONVAIR XF-92A, a jet-powered research plane built for the U.S.A.F. featuring the triangular-shaped Delta wing. The plane was test-flown at Muroc Air Force base, Calif., in 1949

Electric company's twin-jet Canberra bomber, powered by two Rolls-Royce Avon engines; the flight of A. V. Roe Canada's prototype commercial jet liner, with four Rolls-Royce Derwent 5 turbojets; the flight testing of Consolidated Vultee's advanced Delta wing experimental fighter XF-92A (two Allison J35 jets); the unveiling of Allison's 5,500 h.p. doubled turbine propeller engine XT-40, one of the most powerful and most efficient yet seen; and announcement of Canada's first production turbojet engine, the Avro Orenda.

Turbojets.—In the U.S. a new turbojet engine went into production for the air force and navy at United's Pratt and Whitney Aircraft division. Designated J48, it was based on the Rolls-Royce Tay, an advanced version of the Nene, lighter in weight through the extensive use of magnesium, and more powerful (6,250-lb. thrust) by internal redesign permitting increased flow of air.

Allison's redesigned version of the General Electric TG-180 (J35-GE-1 to -15) was introduced as the power plant of the greatly improved Republic F-84E model Thunderjet. Known as the J35-A-17 and -19, the engine had a dry rating of 5,000 lb. of thrust.

General Electric's TG-190A (J47-GE-1 to -11) was stepped up from 5,000 lb. thrust to 5,400 lb. as the series advanced. It supplanted the J35 in the North American B-45C Tornado attack bomber, the Boeing B-47 Stratojet bomber (which unofficially broke a cross-country speed record by flying to Andrews field, Camp Springs, Md., at an average speed of 607 m.p.h.), and as the "jet pod" auxiliary power plants for the Convair B-36 heavy bomber. This engine also powered the Republic XF-91 interceptor and Martin's new three-jet bomber, XB-51. The J47 was given an approved type certificate for commercial use by the CAA, the first U.S. axial-flow jet engine to achieve this goal.

The latest production model of the Westinghouse 24C was the J34-WE-30, with a thrust of 3,200 lb. It was the power plant of Chance Vought's spectacular twin-jet tailless fighter, the XF7U-1 Cutlass, test-flown during 1949. It was also the main power unit in the Douglas 558-2 Skyrocket, with Reaction Motors rocket engine as tail-booster; this navy experimental aircraft unofficially exceeded 763 m.p.h. (speed of sound at sea level) several times during the year. The J34 also powered the McDonnell XF-88 Voodoo and the Lockheed XF-90 air force long-range jet fighters.

An advanced version of the 24C (XJ34-WE-34) passed an endurance test run of 495.7 hr., being the standard air force-navy 150-hr. qualification test repeated three times plus 45.7 hr. extra for verification purposes by Westinghouse engineers. The same engine later passed successfully the newly set up and more stringent MIL-E-5009 150-hr. "simulated service condition" test.

Experimental jet engines in the 8,000 to 9,000-lb. thrust class were discussed during the year. These include the Westinghouse XJ-40, General Electric XJ-53, Pratt and Whitney XJ-57 and a unit in the same power bracket by Allison. These engines were in various stages of development.

In England Rolls-Royce company's first axial-flow turbojet engine RA-1 Avon was flown in the English Electric Canberra twin-jet bomber and in the Avon-Meteor experimental twin-jet fighter, which climbed to 40,000 ft. in a little more than four minutes. The RA-2 Avon was rated at 7,000-lb. thrust, with an advanced version running on the bench at a considerably higher figure. In this same power bracket was the Metropolitan-Vickers F8 Sapphire which was turned over to Armstrong Siddeley Motors for production and further development.

The Rolls-Royce Nene 2 (centrifugal compressor) powered the Hawker P 1052 and Vickers-Supermarine 510 swept-back wing high-speed research aircraft in their first test flights. This basic engine was produced in the U.S. as the Pratt and Whitney Turbo-Wasp, in France by Hispano-Suiza, in Australia by Commonwealth Aircraft and in Argentina by Tecnica Aeronautica. A few Nenes were exported to the U.S.S.R. in 1946, and it was reported as the power plant of the new YAK-17 single-jet fighter, but it was not known if the soviet engineers had succeeded in getting a Russian copy of the engine into limited production. The advanced Nene, known as the Tay, was announced as powering an experimental pure jet version of the Vickers Viscount.

The De Havilland Ghost (5,000-lb. thrust) was the power plant of the 500 m.p.h. Comet jet air liner which had undergone nearly 100 test flights since it first flew in late July. The Ghost was also the engine used in the new D.H. 112 Venom high-altitude fighter.

Canada advanced further into the jet propulsion field by introducing the Avro C-102 Jetliner and the Orenda jet engine. This was a powerful unit in the 6,000 to 7,000 lb. of thrust class—11 ft. long, with straight-through multi-stage axial-flow compressor and six combustion chambers. It was scheduled to power the Avro XC-100 high-speed twin-jet fighter and probably the production models of the jet liner. The Orenda was put through an unprecedented 750-hr. test run, during which it met the requirements of six major British, Canadian and U.S. test schedules.

Sweden went into production on D. H. Goblin jet engines for Vampire fighters and announced that the other fighter for the Swedish air force would be the SAAB J29. Development also continued on two original jet engine projects. Belgium announced that it would build Rolls-Royce Derwent jet engines. In France production of the Hispano version of the Nene began, and development of two or more French designs was continued.

At the Soviet Aviation day show near Moscow in July, three 600 m.p.h. jet fighters were seen in some quantity. They were the Lavochkin LA-8, the Mikoyan-Gurevich MIG-7 and the earlier YAK-15. The first two were powered by the Chelomey jet engine of 6,000-lb. thrust; this was an advanced development, based on better metallurgy and some redesign, of the German Jumo 004H of 4,000-lb. thrust, about ready for production at the end of World War II. A four-jet bomber was also reported as under development.

Turboprops.—Partly as a result of the second joint conference of the Institute of the Aeronautical Sciences and the Royal Aeronautical society in New York during May, the turbine propeller engine received increased attention by U.S. aviation authorities. In December Allison announced details of its 5,500 h.p. XT-40 turboprop developed for the navy. It consisted of two XT-38 units (with 17-stage axial compressor) geared together for one large dual rotation Aeroprop propeller. Weight of the engine alone was only 2,000 lb., and fuel consumption a highly favourable .67 lb. per horsepower per hour. The XT-40 was installed in the Convair XP5Y-1 high-speed flying boat and scheduled for one or two navy attack planes. A commercial application was seen as likely as two single XT-38 units were installed in a Convair liner and Martin 2-0-2 for tests.

A flight testing program for the XT-37 Turbodyne was begun in a modified Northrop Flying Wing, and development continued on the Pratt and Whitney and Ranger turboprops. However, the status of the General Electric XT-31 (test-flown in the Convair XF-81 and Ryan XF2R-1), the Wright XT-35 Typhoon (test-flown in the nose of a B-17) and the Flader XT-33 was not determined.

In Great Britain turbine propeller engines and related aircraft made further advances. The Dart-Viscount (four Rolls-

Royce RDa-1 1,200 h.p. Darts) passed a full year of successful test flying, and the production model 700 with four RDa-3 Darts of 1,400 h.p. was announced. The Mamba-Apollo air liner (four 1,200 h.p. Mambas), the Mamba-Marathon feeder liner (two Mambas) and Theseus-Hermes 5 (two 2,500 h.p. Bristol Theseus turboprops) all flew at the Society of British Aircraft Constructors' highly successful tenth Flying Display and Exhibition at Farnborough.

During the year a 2,500 h.p. double-Mamba (Armstrong Siddeley) and 2,700 h.p. double-Naiad (Napier) were announced, and development continued on Bristol's 6,500 h.p. double-Porteus for the Bristol 167 (Mk.2) and the Saunders-Roe Princess-type flying boat. A pair of Mamba 3 turboprops (1,400 h.p.) was also installed in a Dakota (Douglas DC-3).

Ramjets, Pulsejets and Rocket Engines.—During 1949 development of nonturbine jet engines showed important progress, largely in the military field, hence details were scarce. Besides the navy's bureau of ordnance ramjet program headed by the applied physics laboratory at Johns Hopkins, the air force ramjet program was given new impetus by developments at Marquardt Aircraft on the west coast and at Wright Aeronautical Corp., Wood-Ridge, N.J. Ramjet and pulsejet helicopters were also test-flown. A pulsejet guided missile for target practice was developed by the navy.

In the rocket engine field, Reaction Motors continued development of more powerful units than those used in the Bell X-1 and Douglas 558-2 Skyrocket. Curtiss brought out a powerful unit for the Republic XF-91 jet-and-rocket interceptor.

Jato units for assisted take-off from small fields or high altitudes were widely used and became standard equipment for many cargo planes and for aircraft in Mexico and parts of South America. In England a 5,000-lb. thrust take-off assist rocket called the Sprite was developed by De Havilland for the Comet jet air liner. (*See* also AVIATION, MILITARY; MUNITIONS OF WAR.) (N. F. S.)

Jewish Religious Life: *see* JUDAISM.

Jewish Welfare Board, National: *see* SOCIETIES AND ASSOCIATIONS.

John Simon Guggenheim Memorial Foundation: *see* SOCIETIES AND ASSOCIATIONS.

Johnson, Louis Arthur (1891–), U.S. secretary of defense, was born on Jan. 10 in Roanoke, Va., attended the University of Virginia, and received his law degree in 1912. In 1913 he formed a law firm in Clarksburg, W.Va., with Philip P. Steptoe, specializing in corporation law. He served one term in the West Virginia house of representatives beginning in 1917, served overseas in World War I, and in 1932 was national commander of the American Legion. Johnson was high in the counsels of the Democratic party from the 1920s on, and was appointed assistant secretary of war in 1937, a post he resigned in 1940. In 1942 he served as presidential emissary to India and in the same year was appointed by the Office of Alien Property to administer the General Dyestuff corporation, a division of I. G. Farbenindustrie A. G. He also was a director of the Consolidated Vultee Aircraft corporation and General Analine and Film corporation. During the 1948 presidential campaign Johnson served as chairman of the Democratic finance committee, and when James V. Forrestal resigned as secretary of defense early in 1949, Johnson was appointed (March 3) to succeed him, being confirmed March 23. His action in halting construction of a navy super-aircraft carrier brought to public notice the intense dispute between the services over the respective roles of the navy and the air force in defense strategy.

Jordan, HASHEMITE KINGDOM OF. An independent Arab kingdom of the middle east, Jordan is bounded by Israel (west), Syria (north), Iraq (east) and Saudi Arabia (southeast and south). Area (excluding Arab Palestine): 34,750 sq.mi. Pop. (est. 1948): 400,000. Capital: Amman (pop. 60,000). Arab Palestine, which was occupied by Jordani troops, covers approximately an area of 5,000 sq.mi., with a population of about 1,000,000. Languages (former Trans-Jordan): Arabic 97%, Circassian 2.5%. Religions (former Trans-Jordan): Moslem 91% (chiefly Sunni); Christian 8.5% (chiefly Arab-speaking Greek Orthodox). King: Abdullah ibn Hussein (*q.v.*); prime minister, Tawfiq Pasha Abu-Huda.

History.—Jordan was accorded diplomatic recognition by the United States on Jan. 31, 1949. The government announced on June 2 that Trans-Jordan had changed its name to the Hashemite Kingdom of Jordan and that foreign missions in Amman and the U.N. had been asked to use the new style in all correspondence and documents.

On Jan. 8 it was announced that in response to a request from the government under the Anglo-Trans-Jordan treaty of March 15, 1948, a British force had been sent to Aqaba. The government early in March informed the British minister that Israeli forces moving southward to the gulf of Aqaba had penetrated Jordanian territory at one point and were withdrawn, and on March 12 reinforcements arrived for the British detachment at Aqaba. In March it became known that the British subsidy for the Arab legion had been increased from £2,000,000 to £3,000,000. On May 4 it was announced that an interest-free loan of £1,000,000 had been granted by Britain for development work in connection with the repatriation of refugees.

A cease-fire agreement with Israel was signed at Rhodes on March 11, and an armistice agreement on April 3. The terms provided that the Arabs should retain the territory then held except that control of the Hadera-Afula road and the Lydda-Haifa railway line (except at Tulkarm) should pass to the Israelis. Partially demilitarized zones were to be established along the demarcation lines. By agreement with the Iraqi and Egyptian governments, Jordan in April took over the occupation and administration of the Jenin-Tulkarm and Hebron-Bethlehem areas which had hitherto been Iraqi and Egyptian zones of occupation respectively. The *de facto* accession to the territory of Jordan of those parts of Palestine occupied by its troops, which had been anticipated by the kingdom's change of name, did not receive formal recognition from any power during the year. The government was reshuffled on May 3, the foreign ministry and two other ministries being given to Palestinians.

King Abdullah on April 10 issued a statement on the coup d'état in Syria (*q.v.*) which said that Jordan's policy was one of co-operation with Syria until the Arab states had expressed their verdict on the Greater Syria and Arab unity moves impelled by events in Palestine.

The king visited Tehran on July 28 and on Aug. 7 it was announced that agreement had been reached between Iran and Jordan for a treaty of friendship and collaboration.

On Aug. 26 the Jordanian minister in London announced that a firm of British irrigation engineers had been employed to make the best use of the water available to the kingdom from the Jordan and Yarmuk rivers, and was engaged in drafting practical schemes of irrigation for the Jordan valley in so far as it lies within the kingdom of the Jordan. Press reports said that it was planned to irrigate 75,000 ac. at a cost of about £10,000,000.

A law was enacted in September to replace the Palestine currency, which had hitherto been legal tender, with a new currency administered by a Jordan currency board in London. (*See* also

ISRAEL; PALESTINE; UNITED NATIONS.) (C. HE.)

Education.—(1948) Schools: government 89, nongovernment 86; total pupils 15,201, total teachers 361.

Finance and Banking.—Budget (1947): revenue £P. 1,508,645, expenditure £P. 1,620,672. Monetary unit: Palestine pound at par with the pound sterling=$2.80 U.S. (Dec. 1949).

Foreign Trade.—(1948): Imports £P. 11,539,950; exports £P. 727,638; re-exports £P. 1,783,633; transit of crude oil £P. 706,313.

Transport and Communications.—Licensed motor vehicles (Dec. 1948): cars 1,241, commercial vehicles 1,123.

Agriculture.—Main crops (metric tons, 1948): wheat 100,000; barley 41,000; lentils 7,000; kersennah 9,000; horse beans 9,000; millet 9,000. Livestock (1943): goats 324,000; sheep 200,000; cattle 53,000; donkeys 30,000; horses 6,000; camels 6,000; mules 2,000.

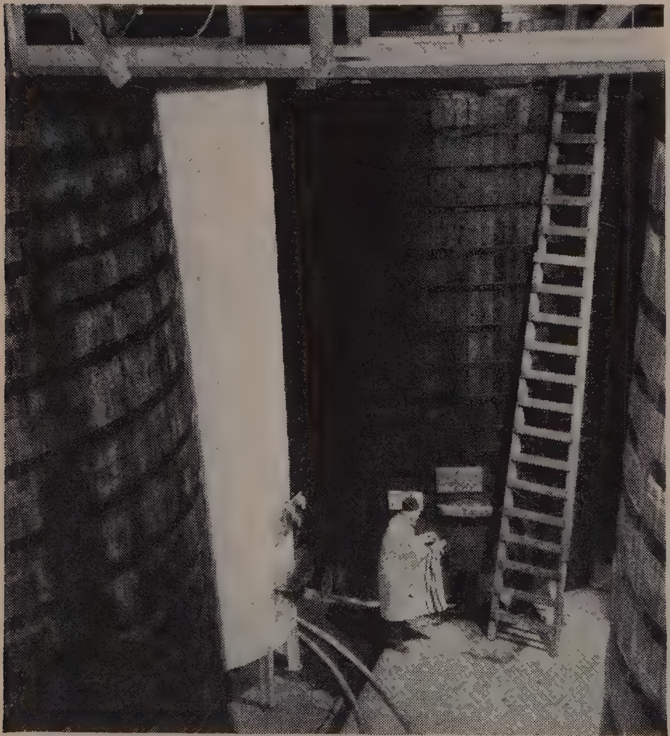
Judaism.

In western Europe a resurgence of religious feeling and interest among the Jewish survivors of nazi brutality was evident in the large attendance at services on Friday evenings and Sabbath mornings. Not only was this the case in Belgium and the Netherlands where Jewish life was wont to be vigorous and vital but also in France and to a lesser degree in Italy. Not a few European Jews who deemed themselves outside the fold because of their marriage to Christian mates were now attracted to the synagogue. The American Joint Distribution Committee in Europe, whose program was predominantly philanthropic, was taking cognizance of this revival and emphasized more than ever the satisfaction of the European Jew's religious and cultural craving.

The establishment of the Israeli state, its recognition by large and small powers and admission as a member in the United Nations, and particularly the ability of its small army to ward off the military attacks of five Arab states disposed even agnostic Jews to believe in the possibility of miracles. To the religious the feat was acclaimed as a manifestation that God is on the side of Israel whose measure of affliction exceeded their past spiritual deficiencies.

The impenetrable "iron curtain" continued to make objective evaluation of the religious disposition of the people of Russia and her satellite countries difficult.

In the western hemisphere dissatisfaction in Jewish circles with the secular conception of life also continued. Now that the establishment of a Jewish state had become a reality, many nationally minded Jews sought a new orientation and a firmer *raison d'être* for their sense of separateness from their Protestant and Catholic fellow Americans. Jewish culture and the Jewish religion acquired greater significance in their eyes. New synagogues were established throughout the United States. The Union of American Hebrew Congregations (Reform) added about 50 such units to its list. The United Synagogue of America (Conservative) pointed to a like growth, and progress of the Orthodox groups was at an even greater pace. Theological seminaries of all shades reported that never had there been as great a demand for rabbis and religious teachers as in 1949.



CASKS OF SACRAMENTAL WINE being inspected by the religious supervisor of a winery in Brooklyn, N.Y., before shipment of the wine to Israel for 1949 Passover services

Jews with religious convictions were becoming more articulate. The Synagogue Council of America continued to widen its activities and its influence. Mindful of the increasing role of religion in the life of U.S. Jewry, the local Jewish Welfare organizations were beginning to allocate greater sums for religious schools, for the institution of a place for worship in their hospitals and the support of chaplains for their inmates. (*See* also RELIGIOUS EDUCATION.) (B. H.)

Jugoslavia: *see* YUGOSLAVIA.
Jumping: *see* TRACK AND FIELD SPORTS.
Junior Colleges: *see* UNIVERSITIES AND COLLEGES.
Justice, U.S. Department of: *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

Juvenile Delinquency.

During 1949 two trends were noticeable, a decrease in the juvenile population of correctional schools and an increase in the use of professional diagnostic and treatment centres. Massachusetts set up two such centres, one at the Lyman Industrial school, Westboro, serving all boys under 17, and one for girls at Lancaster. New Jersey had a diagnostic centre at Trenton, serving all delinquents under 17, staffed with adequate physicians, psychologists, social workers and psychiatrists. The youth authority of California added seven new centres to its program established in 1944. Wisconsin, Ohio, Michigan and Minnesota were following this plan.

The Interdepartmental Committee for Children and Youth, established in May 1948 by the Federal Security administrator at the request of the president of the United States submitted its report July 7, 1949. In this report, compiled by all the heads of federal agencies dealing with delinquent children under 18, it was stated that no individual series represented completely accurate statistics on the nature and extent of juvenile delinquency. Establishment of uniform standards was stressed. The federal children's bureau published summary reports on juvenile delinquency cases disposed of officially and unofficially by juvenile courts from the various states interested in co-operating. These data included information on the child's age, race, sex and length of time in an institution. The statistical gaps occurred largely in the rural and small-town areas. The new plan of the interdepartmental committee would make possible intercity and interstate comparisons of juvenile delinquency.

The children's court was no longer regarded merely as a restraining element in society, but as a welfare service to children in trouble as a result of parents' illness, death, inadequacy, ignorance or neglect. Such children often required legal protection of their person or property. Anything detrimental to the development of emotional security and good social relations was regarded as a potential breeder of juvenile delinquency. (*See* also CHILD WELFARE.) (M. V. W.)

Kansas.

Kansas was admitted to the union as the 34th state on Jan. 29, 1861. It is frequently called the "Sun lower state." The total area is 82,276 sq.mi., of which 82,113 sq.mi. are land. Kansas is located in the geographical centre of the continental United States and is the geodetic centre of the North American continent, from which all geodetic surveys are made. The population was estimated by the U.S. census bureau at 1,947,000 as of July 1, 1949, compared with a 1940 census igure of 1,801,028. The population was about equally divided between urban and rural. Capital: Topeka, pop. (1949): 89,810. The two largest cities in 1949 were Wichita (185,366) and Kansas City (148,254).

History.—The principal state officials in 1949 were: Frank Carlson, governor; F. L. Hagaman, lieutenant governor; Larry Ryan, secretary of state; George Robb, auditor; R. T. Fadely, treasurer; Harold R. Fatzer, attorney general; Adel Throckmorton, superintendent of public instruction; Frank Sullivan, nsurance commissioner. In 1948 Kansas voted to repeal the 68-year-old liquor prohibitory amendment.

Education.—As of June 30, 1948, there were 3,090 one-teacher schools in operation (1,201 having been closed), with an enrolment of 37,996. The enrolment (1948) in elementary and secondary schools was 316,812 (88,049 in secondary schools). There were 16,579 teachers employed in the state. The combined enrolment of the four state colleges and one university was 20,153. The populations of other state institutions were as follows: school for the blind, 86; school for the deaf, 231; Kansas vocational school (Negro), 164.

Social Insurance and Assistance, Public Welfare and Related Programs.—The populations of the state's welfare institutions in 1949 were as follows: hospital for epileptics, 727; state training school, 1,374; hospitals for tuberculars, 395; orphans' and receiving home, 137; hospital for insane, 5,084; industrial school for girls, 113; industrial school for boys, 115; state penitentiary, 1,180; industrial farm for women, 35; reformatory for boys, 367. The 1949 legislature appropriated approximately $20,861,000 for buildings and the welfare program of 1950–51.

Communications.—In 1949 the state had 9,411 mi. of rural highways and 503 mi. of urban highways, the latter being connecting links with state highway systems, controlled by respective municipalities. Highway funds expended during 1949 were $38,634,000. The 1949 legislature provided ncreased revenue to inaugurate a long-range highway improvement program. There were 8,448 mi. of railroads; 95 municipal, 78 privately owned and 3 Civil Aviation administration airports.

Banking and Finance.—The budget for the biennium 1950–51 totalled $58,042,806, an increase of $20,828,873 over the previous budget. Sales tax (2%) collected for 1949 fiscal year totalled $38,593,078, an increase of 2,953,276 over the previous year. The income tax totalled $15,694,409, an increase of $2,837,282 over 1948. The bonded indebtedness totalled $5,250,000. As of June 30, 1949, there were 174 national banks and 437 state banks and 4 trust companies. Of the state banks, 286 were insured under the provisions of the Federal Deposit Insurance corporation. The deposits in the national banks and the insured state banks totalled $1,396,736,986.24.

Agriculture.—Agricultural production in 1949 was below the high levels of recent years but compared favourably with the average of the last ten years. Winter wheat, Kansas' most important crop, was slightly below average and the smallest crop since 1943. Most other major crops, except oats and barley, were larger than average. Corn and sorghum yields were well above average and resulted in large crops. High yields of soybeans on an increased acreage produced the largest soybean crop of record. Hay production, although less than in 1948, was well above average. Fruit crops were the best in recent years. The livestock inventory numbers on Jan. 1, 1949, were: cattle and calves, 3,591,000; hogs, 1,203,000; sheep and lambs, 711,000. The cash farm income from marketings of Kansas agricultural products during the first half of 1949 was about 20% less than in the corresponding period of 1948. The cash net farm income for the year was $1,202,567,000.

Leading Agricultural Products of Kansas

Crop	1949 (est.)	1948	Average 1938–47
Wheat, bu.	167,244,000	231,368,000	180,657,000
Corn, bu.	69,328,000	81,304,000	61,169,000
orghum grain, bu.	21,500,000	26,576,000	19,300,000
Oats, bu.	21,384,000	26,312,000	36,391,000
arley, bu.	3,482,000	6,878,000	12,448,000
oybeans, bu.	2,982,000	2,505,000	1,471,000
Hay, tons	3,376,000	3,565,000	2,425,000

Manufacturing and Mineral Production.—In 1949 the value of the petroleum production of Kansas was $279,500,000, and of natural gas, $68,680. Kansas is also recognized for the production of zinc, cement, lead, coal and salt. In 1949 there were nearly 2,800 manufacturing and processing plants engaged in the production of more than 1,000 items. The total output, valued by the manufacturers and manufacturing establishments, was $461,100,000. (F. CN.)

Kellogg Foundation: *see* SOCIETIES AND ASSOCIATIONS.

Kentucky. An east south-central state, admitted to the union on June 1, 1792, Kentucky is popularly called the "Blue Grass state." Area: 40,395 sq.mi., of which 286 sq.mi. are water. The estimated population (U.S. census bureau) on July 1, 1949, was 2,893,000, an increase of 0.6% over the 1940 population of 2,845,627. Capital: Frankfort (pop. 16,200, est. of Jan. 1, 1949). Other cities are: Louisville (370,400); Covington (66,500); Lexington (58,600); Paducah (41,000); Newport (33,500); Ashland (32,000); Owensboro (31,900); Henderson (21,600); Bowling Green (20,000).

History.—On Jan. 17, 1949, Gov. Earle C. Clements appointed Garrett Lee Withers to fill the unexpired senatorial term of Vice-Pres. Alben W. Barkley. During the fiscal year ending June 30, 1949, Perry county, Richmond, Dawson Springs, Shelbyville, Cattlettsburg and Mt. Sterling legalized the sale of alcoholic beverages. At the close of 1949, 87 counties remained dry.

On Nov. 8, 1949, on the fifth trial, the state abolished the 1891 constitutional limitation of $5,000 on salaries for state officers, other than the governor, by a vote of 178,988 to 162,827. The top limit was set at $12,000 for state officers and the mayor of Louisville, $8,400 for circuit judges and $7,200 for local officers. The state also voted, 232,809 to 125,697, to raise the ceiling on state aid to the handicapped school districts from 10% to 25% of the entire state grant to public schools.

The principal state officers in 1949 were: Earle C. Clements, governor; Lawrence W. Wetherby, lieutenant-governor; George G. Hatcher, secretary of state; A. E. Funk, attorney general; Harry N. Jones, auditor; Edward F. Seiller, treasurer; Boswell B. Hodgkin, superintendent of education.

Education.—Public elementary schools in 1948–49 numbered 4,848 with 12,606 teachers and 461,922 pupils. In 116 public high schools there were 5,363 teachers and 90,733 pupils. The state disbursed $19,350,000 from the school fund, or $28.35 per capita. In addition to the per capita the state distributed $2,150,000 in equalization.

Social Insurance and Assistance, Public Welfare and Related Programs.—Unemployment insurance paid in Oct. 1949 amounted to $1,207,653, an average of $15.58 per payment. Old-age assistance went to 60,828 adults to the amount of $1,282,960. Aid to dependent children amounted to $767,571 for 49,938 and to the needy blind to $47,704 for 2,132. The population of the correctional institutions on Sept. 30, 1949, was: reformatory 2,012; penitentiary 1,093; women's prison 64; houses of reform 461.

Communications.—As of Oct. 31, 1949, the highway department had under regular maintenance 11,368 mi. of road and 12,840 mi. under rural highways maintenance. During the year it had opened 70 new bridges. As of Oct. 31, 1949, the highway department reported eight privately owned toll bridges. Road fund receipts for the fiscal year ending March 31, 1949, amounted to $41,249,262.12; expenditures for that period amounted to $49,379,425.24. The surplus as of March 31, 1949, was $20,820,272.28.

Banking and Finance.—On June 30, 1949, there were 92 national banks with total assets of $612,950,000; 295 state banks and trust companies with resources of $933,714,814.70. The state treasury tax receipts, according to the latest available figures, amounted to $101,355,050.74 for the fiscal year ending June 30, 1949. The major sources were: selected sales and gross receipts $55,250,422.74; income taxes $18,931,152.16; licence and privilege taxes $15,838,583.91; property taxes $8,387,536.94; inheritance and estate taxes $2,084,619.19; miscellaneous $862,735.80. Of the total state tax levies, $55,259,017.04 went to the general fund, $43,471,899.61 to the road fund and $2,624,134.09 to trust and agency funds. The seven largest drafts against the general fund were for education ($34,441,267.84), welfare and economic security ($12,077,198.09), building commission ($4,382,624.76), general administration ($3,126,898.52), courts ($2,212,927.08), health ($1,082,760.14), conservation ($1,049,570.55). The state general fund surplus as of June 30, 1949, was $24,527,097.97.

Agriculture.—The leading crops of 1949 appear in the table.

Leading Agricultural Crops of Kentucky

	1949	1948	Average 1938–47
Corn, bu.	88,762,000	100,040,000	70,856,000
Winter wheat, bu.	5,268,000	5,184,000	5,569,000
Oats, bu.	3,328,000	2,754,000	1,940,000
Barley, bu.	1,638,000	1,348,000	1,669,000
Rye, bu.	378,000	420,000	314,000
All hay, tons	2,635,000	2,194,000	2,238,000
Soy beans (for beans), bu.	2,202,000	2,299,000	892,000
Tobacco, all types, lb.	445,775,000	466,853,000	368,552,000
Potatoes, Irish, bu.	2,730,000	2,542,000	3,750,000
Potatoes, sweet, bu.	913,000	960,000	1,304,000

Mineral Products.—During 1948 coal mines yielded 82,579,453 tons and employed 75,750 miners with a loss of 134 lives, or 1 life per 616,265 tons mined. The output of petroleum in 1948 was 8,926,186 bbl. and the estimated natural gas production was 90,000,000,000 cu.ft. (W. W. Js.)

Kenya: *see* British East Africa.
Kiwanis International: *see* Societies and Associations.
Knights of Columbus: *see* Societies and Associations.

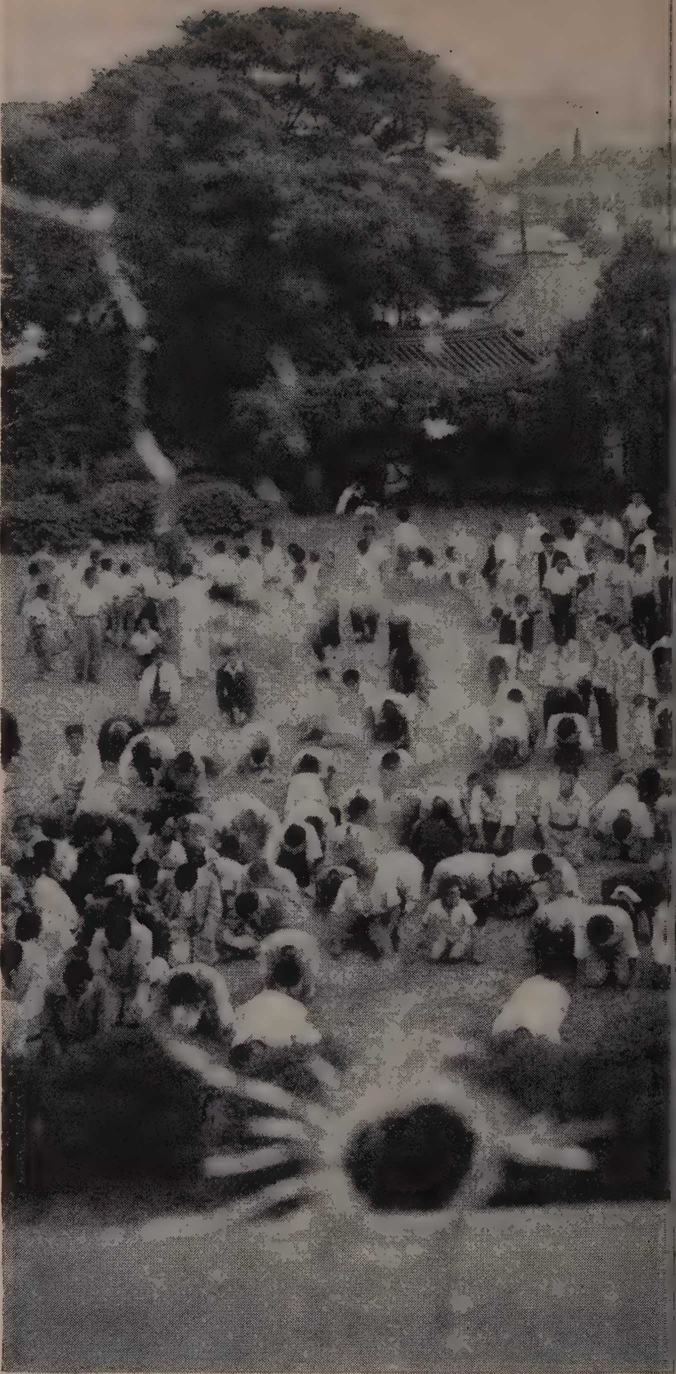
Korea. A peninsula extending from Manchuria southward 600 mi. between the Yellow sea and the Sea of Japan; for 11 mi. it borders the U.S.S.R., the rest of the boundary being with Manchuria. Area: 85,225 sq.mi. The 38th parallel north, chosen to separate soviet and U.S. troops accepting the surrender of Japanese forces, remained during 1949 as the artificial but rigid division between Korean governments organized in each zone. The south had 44% of the area, but its population of 20,188,641 (Sept. 1949 est.) was more than twice that of the north (1949 est. 9,050,000). The largest city is Kyongsong (Seoul); pop. 1,446,049 (May 1949). Other cities with May 1949 populations are Pusan, 473,619, Taegu, 313,705, and Inch'on, 265,767. In the north is P'yongyang: 450,000 (1949 est.), the northern capital. Religions: Buddhism, Confucianism and a unique eclectic religion Chun-dyo-ko. In 1939 there were roughly 500,000 Korean Christians.

History.—On Jan. 1, 1949, President Harry S. Truman announced formal recognition of the Republic of Korea by the United States; on Jan. 30 the first ambassador from the northern regime was received in the U.S.S.R. Both republics claimed suzerainty over all of Korea. The year was marked by solidification of the internal positions of each in their zones and by divergent trends to the right and to the left politically.

The Republic of Korea in the south, which is called domestically Tae Han Min Guk (Great Han Peoples country), had a tumultuous year. The national legislative assembly, for example, adopted on June 2 a resolution calling for dismissal of the entire cabinet; later five members of the assembly, who filed a petition with the U.N. Commission on Korea, were arrested on the order of President Syngman Rhee. Problems of local security made officials fearful and the police, organized on a national basis, were given wide powers which they exercised on occasion very harshly. A Korean army officer assassinated Kim Koo, former president of the Korean Provisional government, a rightist who bitterly opposed the division of the country. An important forward step was taken when an administration-sponsored land reform program was enacted; this would enable more than 1,000,000 farmers to purchase their land from Korean landlords, following a pattern established by the U.S. military authorities in distributing former Japanese-owned land. President Rhee, after a conference with Generalissimo Chiang Kai-shek Aug. 7–8, issued an appeal for a Pacific pact for security purposes but it had luke-warm reception.

The United States army, which had occupied southern Korea after the surrender of Japan, was withdrawn during the first half of the year, the final troops embarking in July. Under treaty provisions a small group of 500 U.S. army officers and men remained to aid in the training of Korean security forces. U.S. economic aid continued on a large scale and with strict U.S. supervision. An Economic Cooperation administration program calling for $150,000,000 expenditure was approved by the U.S. house foreign affairs committee on June 30, but it did not pass the senate until Oct. 12. Actual appropriation was not made by the end of the year, though some interim funds were provided.

The United Nations Commission on Korea remained in southern Korea through the year, operating under some difficulties. They tried in vain to make contacts with the northern regime and to work toward a unification of the peninsula. In reporting their failures to the U.N. general assembly, they laid the blame on the world-wide antagonism between the U.S.S.R. and the United States. The chances for unification in Korea appeared to them to be more and more remote. However, they were in structed by an assembly vote of 44–6 on Oct. 3 to continu their efforts and to pay special attention to military develop ments in Korea which might lead to full-scale civil war. Th Republic of Korea's appeal for a place in the U.N. assembl was vetoed by the U.S.S.R. The application of the Democrati Peoples' republic for membership was likewise rejected.


KOREANS mourning the death of Kim Koo are shown photographed throug the bullet-pierced window of his study. Dr. Koo, leading opponent of Pre Syngman Rhee, was assassinated in his home in Seoul, June 26, 1949

In the north, soviet troops were withdrawn in the last wee of 1948, thereby ending their occupation. A Korean-sovie agreement for economic and cultural co-operation was signed i Moscow on March 21, during a visit of northern leaders, inclu ing Kim Il-sung, the premier. The northern regime continued t use subversive and propaganda attacks on the south. Activ fighting took place along the western part of the 38th paralle

The internal patterns of the north were developed alon Communist lines with nationalization of banks, industry, trans port and commerce. A two-year plan for the national econom for 1949–50 was publicized. It called for an increase in agricu ural land sown, building of irrigation works and increase in grain production and in livestock.

The whole pattern of developments during 1949 showed a urther hardening of the cleavages between north and south Korea. The situation, especially along the 38th parallel, was grave. Both regimes were being bolstered by outside aid. Though n both areas there was some increased economic development, he lot of the common man was insecure and unhappy.

Education.—A group of U.S. educators had worked with Korean teachers in south Korea in revising the rigid system which had been established y the Japanese. The mass teaching of *hankul,* the native syllabary, was tarted after the war and the literacy rate was rapidly increasing; in he south the rate in 1949 was 66% of those over 13 years of age. n the north the claim was made that 1,740,000 students were enrolled n 4,327 primary and secondary schools and that 11 institutions of igher learning had been established.

Defense.—Native defense forces had been organized in both north and outh, and were equipped and trained in part by the respective outside owers. Troops in the north were estimated at 200,000 men. In the outh the Korean constabulary numbered about 60,000 and the military orces were estimated at 150,000.

Finance.—Complete financial data were available during 1949 only for outh Korea. The value of the won maintained its low level of 1948; he official rate of exchange was 450 won to $1 U.S. For conversion of alues in official publications a rate double that was used; however, in eptember, 1949, curb rates for greenbacks was $1 U.S. to 1,900 won. Measures slowing down the rate of inflation had not been too effective. The bank of Korea note issue used in the south increased from 8,700,000,000 won in Sept. 1945, to 49,100,000,000 won in Sept. 1949. In oth areas budgets were far unbalanced, depending on note issue to ake up deficits. In the south the 1949–50 budget called for 57,322,95,000 won for general expenditures and 166,110,909,000 won for pecial expenditures; and in the north the figure was 19,762,630,000 won or general expenditures, an increase of 44.7% over the year before.

Trade.—Trade on a barter basis between the north and south was topped in the spring, though clandestine trade continued. In the south, oreign trade was largely restricted to essential imports of food, petroleum, ertilizers, coal and raw materials for industry. Most of this was andled under ECA controls; ECA procurement authorizations for the irst 11 months of the year totalled $52,998,000, of which about onealf was in the U.S. Imports in the first nine months of 1949 exceeded xports (mostly fish products) by a ratio of nine to one.

Communications.—In 1944 there were 3,115 mi. of track in operation, arrying 106,372,624 passengers and 27,525,654 metric tons of freight.

Agriculture.—Rice is the most important agricultural product; 1948 roduction in the south was estimated at 2,500,000 metric tons. Other roducts were barley (352,393 tons), naked barley (212,780 tons), wheat (89,912 tons) and rye (18,896 tons). Fish and marine products were estimated at 300,000 metric tons in 1948. Production of crops was ided by fertilizers imported with ECA aid; in 1948–49, 600,000 tons were imported.

Manufacturing.—Production goals for 1948 announced for manufacuring in the north were claimed to have been attained in 1949; pig ron 9,000,000 tons; chemical fertilizers 332,000 tons; salt 150,000 tons; ayon yarn, 1,440 tons; reliable information on these figures was unbtainable. Communist officials made statements at the end of the year hat showed that industrial production had evidently been lagging coniderably. The north Korean action in cutting off the power supply norally furnished to the south seriously hampered manufacturing there. ndustrial facilities in the south were mostly chemical plants, food rocessing and textile factories and light consumer-goods industries such s rubber shoes, bicycle tires, etc. All of these are reported to have had considerable increase in production in 1949.

Mineral Production.—The major mineral resources are found in the orth where iron, coal, gold and many other ore deposits were exloited by the Japanese. In the south anthracite coal production was imited: 714,150 tons were mined in 1948 and monthly production eached a peak of 97,918 tons in April 1949. Bituminous coal, overwhelmingly for transport facilities, was imported from Japan, 967,903 ons in 1948. In 1944 south Korea was the world's leading producer of raphite (103,000 metric tons); production in 1948 was one-seventh of hat amount.

(*See* also UNITED NATIONS.) (S. McC.)

Krug, Julius Albert

(1907–), U.S. government official, was born on Nov. 23 in Madion, Wis., and received an M.A. degree from the University of Wisconsin, Madison, in 1930. After serving as a power engineer nd consultant for several federal agencies between 1936 and 941, he became an executive of the War Production board 1943), and after a period as a lieutenant commander in the avy returned to WPB as its chairman in the fall of 1944. He esigned in Oct. 1945, and was appointed secretary of the inerior by President Harry S. Truman on Feb. 26, 1946.

On Feb. 11, 1949, Krug told a joint congressional committee nvestigating U.S. economic conditions that nation-wide proluction of electric power was still 10% short of demand, and warned that a continuing shortage of steel might mean that voluntary allocations might have to be superseded by mandatory allocations. In August, before the United Nations Economic and Social council's conference on conservation and the utilization of resources, he told the delegates that the U.S. was ready to give "substantial" aid to backward countries in terms of both technology and investment. He presented to congress a water-resource development program for California's Central Valley project, of which one controversial section would transfer much dam-building authority from the army engineers to the interior department. He resigned as secretary of the interior, effective Dec. 1.

Kuwait: *see* ARABIA.

Labor, U.S. Department of: *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

Labour: *see* AGRICULTURE; CHILD LABOUR; CHILD WELFARE; EMPLOYMENT; FEDERAL MEDIATION AND CONCILIATION SERVICE; INTERNATIONAL LABOUR ORGANIZATION; LABOUR UNIONS; LAW; NATIONAL LABOR RELATIONS BOARD; NATIONAL MEDIATION BOARD; NEGROES, AMERICAN; SHIPBUILDING; STRIKES; UNITED STATES; WAGES AND HOURS. *See* also under various states.

Labour Party, Great Britain: *see* POLITICAL PARTIES, BRITISH; SOCIALISM.

Labour Unions.

Political issues affecting the demands and position of organized labour in the U.S. were the leading subjects of debate in the long first session of the 81st congress. The large and unexpected victory of the Democrats in the national political campaign of Nov. 1948 persuaded leaders of the American Federation of Labor and the Congress of Industrial Organizations that the new congress, with the support of Pres. Harry S. Truman, would repeal the

"WHERE DOES HE FIT IN?" editorial query by Costello, published in the *Knickerbocker News* (Albany) in 1949

Taft-Hartley act, extend and liberalize the federal social insurance system and raise the statutory minimum wage rate.

In these hopes labour was disappointed. Although repeal of the Taft-Hartley act and restoration of the Wagner act was one of the principal campaign promises of the Democratic party, the majority of the new congress, including both Democrats and Republicans, resisted pressure from the president and union leaders. The dominant opinion of congress was that the Taft-Hartley act had corrected abuses associated with the Wagner act. Any revision of the law, therefore, would have to be moderate and limited to win the support of congress. The unions, however, wanted either the essence of the Wagner act or no change in the law at all, and they rejected a considerable revision proposed by Senator Robert A. Taft. The result was that congress adjourned without changing the law and left the Taft-Hartley act as the foremost issue in the congressional elections of 1950.

Organized labour was no more successful in its efforts to win thoroughgoing revision of social insurance legislation, since congress failed to adopt a bill to raise old-age pensions and various forms of assistance and substantially extended the coverage of the pension plan. But congress did satisfy union demands by raising the statutory minimum wage from 40 to 75 cents an hour and appropriating large federal subsidies to promote housing construction for the lower-income population.

Much of what happened in U.S. labour relations in 1949 was influenced by economic conditions. Although the year proved, in retrospect, to have been almost as good a year as 1948, there occurred within the 12 months a noticeable slump in production, employment and profits and an increase in unemployment. This turn in business, the first of the sort since 1939, made it difficult for the unions to pursue their expected demand for a fourth round of wage increases. Two national unions of clothing and textile workers renewed agreements with employers at existing wage scales, and in a few cases, notably in lead and zinc mining, the unions accepted wage cuts.

In the major negotiations for contract renewals in 1949, union policy took another direction. The C.I.O. Steel and Automobile Workers' unions added to their wage demands proposals for company financed pension and insurance benefits, it being generally understood that wage concessions would be waived in return for a satisfactory settlement of the union pension and insurance claims. As in previous years a single union, in this case the United Steel Workers, assumed the leadership in the drive for welfare benefits as a substitute for higher wages. The negotiations between the unions and the steel companies ended in disagreement, mainly because the companies considered the union proposals excessively costly and because some companies, in particular the U.S. Steel Corp., insisted on contributions by their employees to the pension funds. Failing to reach agreement the union prepared to call a national steel strike.

At this point President Truman intervened with the appointment of the Steel Fact-finding board, before which the industry reluctantly and the union eagerly appeared to present their respective cases. The findings of the board were legally not binding on either party, but it was clear that what the board recommended would have a determining influence on the ultimate settlement. That was, in fact, what happened. The board ruled against a wage increase because of unfavourable business conditions. But it recommended both pensions and social insurance to be financed by employer contributions amounting to ten cents an hour. In its argument the board found the cost of such benefits to be an appropriate charge on business and threw the weight of its influence toward noncontributory pensions. The board's report was accepted by the union and rejected by the employers. On Oct. 1 the steel industry was struck.

Pensions and welfare benefits were likewise the source of strikes and disturbances in coal mining. In this industry, pensions and welfare funds, financed by a royalty on each ton of coal produced, had been in existence since the settlement of the strike of April 1946. The royalty amounted in 1949 to 20 cents a ton. The causes of trouble were in the main peculiar to this industry and the policies of John L. Lewis. The funds, for all practical purposes administered by the union, ran out of sufficient reserves. In 1949, therefore, the United Mine Workers wanted the royalty raised and, in addition, sought a shorter work-week and a substantial rise in wages. Negotiations, which ran through a large part of the year, got nowhere. The coal operators, already suffering from the loss of business to competing fuels, were unwilling to lift costs still higher. Considering, also, the alleged wastes in the union administration of the benefit funds, they objected to making a new contract which failed to deal with this problem. The miners, unable to get what they wanted, resorted to direct action. For a large part of the year Lewis ordered his members to work only three days a week, and late in the year the entire industry was shut down by a strike. When the year ended nothing was settled, and the industry was again, by union order, on a three-day week.

The national steel and coal strikes raised the losses from labour stoppages to the unusually high level of 53,000,000 man-days, a total exceeded only in the troubled year 1946. The steel strike was settled after a month's idleness, though numerous strikes against particular companies ran beyond that time. The settlement reached in steel afforded the pattern which was being followed throughout U.S. industry. Business had assumed the cost of private pensions and insurance. The financial obligations so undertaken varied widely but were likely to average ten cents an hour and in time to exceed that sum by a substantial amount.

The outstanding development of the year in the internal affairs of organized labour was the campaign within the C.I.O. to eliminate Communists from the control of a number of its constituent unions. The fight against communism began shortly after World War II, when U.S. Communists showed themselves more friendly to the U.S.S.R. than to U.S. policies. The struggle came to a head in 1949, when the C.I.O. expelled the Electrical and Radio and Farm Equipment Workers' unions and granted jurisdiction over their members to other organizations. In addition it took steps to investigate and reorganize ten unions, including such organizations as the Longshoremen of Harry Bridges, the Fur and Leather and Mine, Mill and Smelter Workers' unions.

During 1949, total union membership increased only slightly and remained just above 14,000,000. The great rise in membership during World War II and again in 1947 and the levelling of business accounted for the slower expansion in 1948 an 1949. The large unions listed in the table continued to dominat the U.S. labour movement; their combined membership equalle about 45% of the total. (*See* also Building and Construction Industry; Business Review; Law; National Labo Relations Board; Strikes.) (L. Wo.)

Membership of Principal U.S. Labour Unions

Union	Membershi (1948 or 1949
Automobile (C.I.O.)	893,00
Steel (C.I.O.)	884,00
Machinists (Ind.)	650,00
Teamsters (A.F. of L.)	625,00
Carpenters (A.F. of L.)	600,00
Miners (Ind.)	600,00
Electrical (C.I.O.)	570,00
Hotels (A.F. of L.)	381,00
Ladies Garment (A.F. of L.)	350,00
Textile (C.I.O.)	332,00
Electrical (A.F. of L.)	330,00
Total	6,215,00

Canada.—Observers believed that Canadian labour unions gained prestige and strength during 1949 by their anticommunism stand. The warring elements within the Trades and Labour congress set up a committee to study the charges of Communist influence "far in excess of their proportionate strength." As a consequence, the Canadian Seaman's union left the T.L.C. before it could be expelled. Similar action by the Canadian Congress of Labour resulted in final suspension, after several warnings, of the United Electrical, Radio and Machine Workers and of the International Union of Mine, Mill and Smelter Workers.

By 1949 Canadian labour union membership went over the 1,000,000 mark. (C. Cy.)

Great Britain.—The British Trades Union congress held at Bridlington, Yorkshire, in Sept. 1949 represented 7,936,600 members organized in 187 trade unions, compared with 7,791,470 in 188 unions the previous year. Most groups increased their membership to a small extent; but there were small reductions in the case of the general workers, the railwaymen and one or two others. The total membership included 1,237,000 females, compared with 1,220,000 in 1948. The Trades Union congress includes nearly all the big trade unions except the National Union of Teachers (181,000) and the National Association of Local Government Officers (190,000). The latest figures of total trade union membership related to the end of 1947, when there were in all 9,114,000 trade union members, of whom 1,662,000 were females. The Scottish Trades Union congress, separate from the British T.U.C., had 809,000 affiliated members in Scottish trade unions or in Scottish branches of British unions in 1948; but most of these were also included in the British T.U.C. figures. The General Federation of Trade Unions, acting mainly as a mutual insurance society for a number of the smaller unions, had 319,000 members in 1949, including a number of small unions not belonging to the T.U.C.

A few big trade unions included a high proportion of the total membership. The biggest were the Transport and General Workers (1,271,000), the General and Municipal Workers (816,000), the Amalgamated Engineering union (743,000), the National Union of Mineworkers (611,000), the National Union of Railwaymen (455,000) and the Shop, Distributive and Allied Workers (342,000). Nine others, besides the two unaffiliated bodies already mentioned, had more than 100,000; and 14 more, between 50,000 and 100,000. The largest groups in the Trades Union congress were the Transport Workers (other than railways), with 1,383,000 in 10 unions, and the Engineering and Vehicle Workers, with 1,250,000 in 27 separate unions.

The Trades Union congress of 1949 met under the shadow of economic crisis, but before the devaluation of sterling was announced. The principal issues before it were the policy to be followed in respect of wage claims, the representation of trade unions on the boards administering nationalized industries and services and the secession of the British delegation from the World Federation of Trade Unions (*see* below).

On the first and last of these issues it was a foregone conclusion that the policy of the general council would be approved, in face of strong opposition from the pro-Communist minority. Actually, the voting on the wages issue was much the same as the year before, the general council's resolution reaffirming the policy of restraint in pressing wage claims being carried by 6,485,000 to 1,038,000. The resolution approving the general council's secession from the W.F.T.U. and its subsequent steps toward the formation of a new International was carried by 6,258,000 to 1,017,000. On the other main issue, a resolution requiring that trade union representation on the boards of nationalized industries should be drawn from the unions representing the workers in the industries concerned was defeated by the rather narrow margin of 800,000.

DELEGATES to the 1949 convention of the United Automobile Workers (C.I.O.) at Milwaukee, Wis., where Walter Reuther was re-elected to the international presidency of the union against left-wing opposition

France.—There were no strikes in 1949 comparable with the large coal strike of Oct. 1948. The most important single strike movement was a 24-hr. strike of the civil service, called originally by Force Ouvrière, but backed by the other trade union federations, to demand salary increases.

The French trade union movement continued throughout the year to be divided into rival factions. The C.G.T.-F.O. (Confédération Générale du Travail-Force Ouvrière), the anti-Communist trade union federation led by Léon Jouhaux and closely connected with the Socialist party, failed, despite some financial support from the British trade unions, to make much headway except among the nonmanual workers. The C.F.T.C. (Confédération Française des Travailleurs Chrétiens) continued its independent existence, and in Oct. 1949, a new independent federation, Confédération Syndicale du Travail, was founded by a number of unions that had held apart from the existing bodies and also included a number who had been expelled or who had seceded from the Communist-dominated C.G.T. (its secretary-general was Benoît Frachon, a Communist member of the national assembly).

Italy.—In Italy, the most important strike in 1949 broke out in May among the farm workers in the Po valley, Latium and Apulia. It was supported by both Communist and non-Communist trade union groups and resulted after five weeks' struggle in the grant of a cost-of-living bonus, in the extension of unemployment benefit to agricultural workers and in a number of other concessions. The Italian trade union movement, like the French, continued to be divided into rival factions, the largest section being organized in the C.G.I.L. (Confederazione Generale Italiana del Lavoro or General Confederation of Italian Labour), which was under the control of the Communists in conjunction with the Pietro Nenni P.S.I. (Partito Socialista Italiano). The Christian trade union organization (Corrente Sindacale Cristiana), formed in Aug. 1948, decided later in that year to transform itself into an anti-Communist L.C.G.I.L. (Libera Confederazione Generale Italiana dei Lavoratori), but failed to carry with it the bulk of the anti-Communist workers that were not organized on a definitely Christian basis. In May 1949 the dissident P.S.L.I. (Partito Socialista dei Lavoratori Italiani), led by Giuseppe Saragat, joined with the Republican party, led by Randolfo Pacciardi, in forming a new body, the F.I.L. (Federazione Italiana del Lavoro), and there were thus three rival bodies attempting to represent the Italian workers. (*See* also ITALY; SOCIALISM.)

International Movement.—The strong disagreements which had been evident for some time inside the World Federation of Trade Unions came to a head in Jan. 1949 when the British Trades Union congress and the U.S. Congress of Industrial Organizations joined in a demand that the W.F.T.U. suspend its activities for the time being and, when this proposal was rejected, withdrew from further participation in its proceedings.

The cause of this split was the carrying on by the executive bureau and officials of the W.F.T.U. of a Communist-inspired campaign against the European Recovery program and against the support given to it by the British, U.S. and other trade union groups.

In June 1949 the British Trades Union congress, in close consultation with the Americans and with other bodies which had left the W.F.T.U., called at Geneva a preparatory conference for the establishment of a new International Confederation of Free Trade Unions. The A.F. of L., which had refused throughout to join the W.F.T.U., took part in this gathering together with the C.I.O.

On Nov. 28 about 245 delegates of more than 47,000,000 members of non-Communist trade unions throughout the world met in London to adopt the constitution of the new I.C.F.T.U. Paul Finet, of Belgium, was elected chairman of the London congress and J. H. Oldenbroek (Netherlands) secretary-general. An executive board of 19 was elected on Dec. 7 with J. H. Oldenbroek as secretary-general. (G. D. H. C.)

Labrador: *see* NEWFOUNDLAND AND LABRADOR.
Labuan: *see* BRITISH BORNEO.

Lacrosse. A strong Naval academy ten and a team from Johns Hopkins university, winner of the title two years in a row, shared the 1949 championship of the United States Intercollegiate Lacrosse association. The Johns Hopkins Jays and Navy Middies proved the standout teams in a season that found more schools than ever before playing regular schedules in quest of the Wingate Memorial trophy, symbol of league laurels.

A ten from the south registered its first victory since 1943 in the annual All-Star encounter with the north, winning by 11–6 at Troy, N.Y., on June 11. Led by Jim Adams, Johns Hopkins ace, who tallied three times, the southerners scored six goals in the last period to triumph.

Women's lacrosse was featured by the visit to the United States of an all-England squad which hung up ten straight triumphs in addition to conducting clinics and demonstration games during their tour. Highlight of the trip came on May 1 at Hunter college in New York city when the invaders defeated an all-United States team, 17–2.

Women's national laurels were captured by Westchester when it conquered Philadelphia, 5–3, in the annual championship at Greenwich, Conn., in May. (T. V. H.)

Lamb: *see* MEAT.
Laos: *see* FRENCH UNION.
Lard: *see* MEAT.
Latin America: *see* ARGENTINA; BOLIVIA; BRAZIL; BRITISH GUIANA; BRITISH HONDURAS; CHILE; COLOMBIA; COSTA RICA; ECUADOR; FRENCH UNION; GUATEMALA; HONDURAS; NICARAGUA; PANAMÁ; PARAGUAY; PERU; SALVADOR, EL; SURINAM; URUGUAY; VENEZUELA.
Latter Day Saints: *see* MORMONS.

Latvia. From Jan. 18, 1919, to Aug. 5, 1940, when it was annexed by the U.S.S.R., Latvia was an independent Baltic republic. The British, U.S. and many other governments, however, had not granted by 1949 *de jure* recognition to this annexation. Area: 25,395 sq.mi. Pop. (Jan. 1939 est.): 1,994,500; (Jan. 1946 est.) 1,650,000. The reduction is explained by the evacuation of the German minority (*c.* 50,000) in 1939–40, by soviet deportations in 1940–41 (*c.* 34,000), by the murder by the Germans of about 90,000 Jews, by the fact that about 65,000 Latvians fled to Germany when the soviet armies returned and by a second wave of soviet deportations in 1945 (about 105,000). Chief towns: Riga (cap., pop., 1939 est., 393,210); Liepaja (1935 census, 57,098); Daugavpils (1935, 45,160). Chairman of the presidium of the supreme soviet of the Latvian S.S.R.: August M. Kirchensteins; chairman of the council of ministers: Vilis T. Lacis.

History.—Latvians who escaped to Sweden in March 1949 reported that a new wave of deportation was in progress according to a plan prepared by V. S. Abakumov, soviet minister of state security and S. N. Kruglov, soviet minister of internal affairs and director of all soviet camps of forced labour. This plan concerned not only Latvia, but also Estonia and Lithuania (*qq.v.*). Persons selected for deportation included political prisoners under investigation or arrest; families of persons accused of espionage, participation in the underground movement and contacts with foreign countries; former professional soldiers, officers and noncommissioned officers, with families; former civil servants; former teachers and professors with families; priests and members of religious organizations; and members of the free professions with families. Altogether about 70,000 were said to have been deported from Latvia.

Contrary to soviet promises in 1944, on the eve of the second occupation, collectivization was enforced during 1949 with ruthless determination. In the spring of 1947 there were only 4 *kolkhozes* (collective farms); a year later their number had increased to 189; and on July 21, 1949, V. T. Lacis announced that there were 3,879 *kolkhozes,* embracing four-fifths of the arable land. But the sowed area in the spring of 1949 amounted to only 1,900,000 hectares against 2,239,000 hectares in 1939, and milch cows numbered 380,000 against 890,200 in 1939.

The number of industrial workers in 1949 was 118,000—one-fifth more than in 1938. According to an article by J. E. Kalnberzins, about 5,000 Russian technicians—one-fourth of the total—helped to manage Latvian industries. F. Dalgavs, chairman of the state planning commission, reported that by April 1949 only about 1,500 industrial plants had been rehabilitated—one-fourth of the plants which existed in Latvia in 1939. Nevertheless, on Nov. 6, 1949, Kalnberzins and Lacis reported in a telegram to Stalin that the total industrial production was double what it had been in 1940.

Education.—According to Lacis, the total number of pupils in all schools in 1949 was 40,000 more than in bourgeois Latvia. (In 1939 ere were 1,895 elementary schools with 229,825 pupils and 114 sec- dary schools with 25,225 pupils.)

BIBLIOGRAPHY.—M. Čakste, "Latvia and the Soviet Union," *Journal of entral European Affairs* (April 1949). (K. SM.)

aw. Only the more important U.S. legal developments of general interest during 1949 are reported in this article.

Administrative Law.—The right to argue orally before an dministrative agency is not an inherent part of due process, e supreme court ruled. The Federal Communications commis- on was justified in refusing to hear oral arguments in support f a petition which was insufficient on its face to raise a legal sue (*FCC* v. *WJR*, 337 U.S. 265). The court also declined to isturb an order of the National Labor Relations board merely ecause the trial examiner had uniformly credited the board's itnesses and discredited those of the employer. This in itself id not indicate bias, nor did the record of the hearing disclose ny (*NLRB* v. *Pittsburgh S.S. Co.*, 337 U.S. 656). But agencies ust carefully follow prescribed procedures, the court said. An mmigrant may not be barred from entering the U.S. because f mental illness unless such a finding is made after strict com- liance with public health service regulations (*U.S.* v. *Shaugh- essy*, 336 U.S. 806).

The supreme court also passed upon the jurisdiction and owers of state and federal agencies in several cases. A Cali- ornia travel bureau had been convicted of violating a state atute prohibiting the sale of transportation over state high- ays by carriers not holding permits from the Interstate Com- erce commission. The travel bureau ingeniously contended at the state law was invalid because it conflicted with the risdiction of the ICC conferred upon it by congress under e Motor Carrier act. But the supreme court rejected this ew. The fact that a state law coincides with a federal law does ot render it invalid unless congress has clearly shown the tention of giving exclusive jurisdiction to the federal agency *California* v. *Zook*, 336 U.S. 725). Such exclusive jurisdiction as conferred by congress upon the NLRB in the matter of rtifying the representatives of employees for collective bar- aining in an interstate industry, according to the supreme court, hich set aside the certification of a union by the Wisconsin mployment Relations board. Even though the national agency ad not assumed jurisdiction, the state board's action was valid unless and until the NLRB expressly ceded its jurisdic- on (*La Crosse Tel. Co.* v. *Wis. ERB*, 336 U.S. 18).

A narrower view was taken by the high court of the powers the Federal Power commission under the National Gas act. n interstate gas company may sell its undeveloped gas leases ithout the permission of the FPC, the court held (*FPC* v. *anhandle Pipe Line Co.*, 336 U.S. 935). The supreme court also greed with the strict view of its own authority taken by the ivil Aeronautics board when it turned down an air carrier's etition to make a new air mail rate retroactive (*T.W.A.* v. *AB*, 336 U.S. 601).

Congress enacted the Federal Property and Administrative ervices act of 1949 to provide an economical and efficient sys- m for procurement, utilization of available property, disposal surplus property and records management. The act set up a ew General Services administration to take over the functions the bureau of federal supply, Federal Works agency, War ssets administration, national archives establishment, the ublic Buildings administration and the Public Roads admin- tration.

Congress also passed a permanent act for the reorganization the executive branch of the government giving the president thority to make such changes as would promote efficiency and onomy in operation. Reorganization plans would become ef- ctive 60 days from the time of their submission to congress by the president unless either house should pass a resolution disapproving such plans within the 60 day period.

"JOHN BULL: 'You Would Have Tossed Him Back Anyhow!' " a cartoon by Loring of the *Providence Evening Bulletin (R.I.)* referring to the British court ruling of 1949 that Gerhart Eisler, German Communist, could not be extradited to the U.S.

Agriculture.—The secretary of agriculture was authorized by congress to make "production disaster loans" to farmers and stockmen in any region where disaster had caused a shortage of credit through customary private sources. The Regional Agricultural Credit corporation was killed and its functions and authority were transferred to the secretary of agriculture, together with a revolving fund to be used for disaster loans. Provision was also made for the gradual expansion of the experimental crop insurance program, including multiple crop insurance of all major crops on a farm wide basis.

The Agriculture act of 1949 extended the price support program, assigning ranges of parity prices for classified commodities to be determined by the secretary of agriculture after consideration of factors laid down by the new law.

Congress also revised the charter of the Commodity Credit corporation, permitting it to provide storage facilities for farmers where needed to enable them to market crops at more favourable times. The Rural Electrification administration was empowered to make loans at low interest rates for financing telephone as well as electric lines in rural areas. A national forest survey was authorized, and agricultural extension work was provided for Alaska and Puerto Rico.

Aliens and Citizenship.—In two cases the supreme court insisted that proceedings affecting the right of citizenship must be conducted with scrupulous fairness. The high court reversed a district court judgment denaturalizing August Klapprott, former German-American Bund leader. He had not been given a reasonable opportunity to be heard, the court said. At the time when the denaturalization case came up, he had been ill, impoverished and a prisoner in jail awaiting trial on charges that were later dropped; and he had not been represented by counsel (*Klapprott* v. *U.S.*, 335 U.S. 601). The supreme court also gave a second chance to an immigrant who had been barred from the U.S. as a mental defective, because the report of a medical board of review did not show that its conclusions were based "upon its medical examination of the alien," as required by public health service regulations (*U.S.* v. *Shaughnessy*, 336

U.S. 806).

The ninth circuit court of appeals restored U.S. citizenship to three former citizens of Japanese descent. The court found that they had renounced their citizenship as "the result of undue influence, mistake, misunderstanding and coercion" during their enforced resettlement in relocation centres.

The Oregon supreme court knocked out a state law which barred Japanese aliens who were ineligible for citizenship from owning or leasing farm land. The Oregon court held that "the Alien Land Law was designed to effectuate a purely racial discrimination."

Armed Forces.—The supreme court considered the jurisdiction and powers of courts-martial in three cases arising out of World War II. The justices all agreed that a naval court-martial did not have the right to try a serviceman for offenses committed during a prior enlistment. A petty officer, who had rejoined the navy on the day after his honourable discharge, was convicted by a navy court of beating two fellow war prisoners in a Japanese camp in the Philippines. His sentence was set aside as illegal because the navy had lost jurisdiction to try such offenses after his discharge (*U.S. ex rel. Hirschberg* v. *Cooke,* 336 U.S. 210). Two army court-martial sentences for rape were upheld. One case had been tried during the rapid advance of the army in Germany, but after hearing evidence and arguments of counsel the charges were withdrawn because the father and mother of the victim could not attend as witnesses. The defendant was convicted at a later trial. He sought a reversal on the ground that he had been put in double jeopardy. In sustaining the conviction the supreme court said that the 125 year old ruling in the *Perez* case (9 Wheat. U.S. 579) applied to military as well as civil trials. The hearing of a criminal case may be discontinued within the discretion of the court when necessary in the interests of justice without subjecting the defendant to double jeopardy (*Wade* v. *Hunter,* 336 U.S. 684). The court also gave short shrift to the plea of a second petitioner that he had been convicted in violation of the 70th article of war which provides that "no charge will be referred to a general court-martial for trial until after a thorough and impartial investigation." The supreme court said that it could not review the evidence but was limited to jurisdictional questions. Strict compliance with article 70 was not a prerequisite to jurisdiction by the army court (*Humphrey* v. *Smith,* 336 U.S. 695).

The supreme court opened the doors of the federal courts to suits by service personnel against the United States under the Tort Claims act for injuries not arising out of their service. Suit was properly brought in a district court to recover damages for the death of one serviceman and injuries to another when the private car in which they were riding was struck by an army truck. Membership in the armed forces did not bar their right of action (*Brooks* v. *U.S.,* 335 U.S. 901).

Business Regulation.—The perennial doubt whether trust-busting as practiced by the government was really busting trusts or serving to make them bigger arose in a case involving the right of the Standard Oil Co. of California to tie up independent automobile service stations with contracts to handle the company's products exclusively. A majority of the supreme court held that such contracts violated section 3 of the Clayton act because they might substantially lessen competition. But Justice William O. Douglas, one of four dissenters, wryly remarked that "the economic theories which the court has read into the antitrust laws have favoured rather than discouraged monopoly." The majority decision, he said, would merely force the big oil companies to build service station empires of their own and drive independents completely out of business (*Standard Oil Co.* v. *U.S.,* 336 U.S. 935). The justices were unanimous, however, in ruling against a deal between an association of stitching contractors and sportswear jobbers under which the latter were required to send all their work to members of the association who were in good standing with a garment workers union. This was clearly an illegal restraint on commerce. The labour provisions did not immunize the agreement against the antimonopoly laws. "Benefits to organized labour cannot be utilized as a cat's-paw to pull employers' chestnuts out of the antitrust fires" (*U.S.* v. *Sportswear Assn.,* 336 U.S. 460).

Three state laws regulating commerce were upheld by the U.S. supreme court: a South Carolina statute prohibiting life insurance companies and their agents from engaging in the undertaking business (*Daniel* v. *F.S.L. Ins. Co.,* 336 U.S. 220); a New York city traffic regulation forbidding truckers from carrying signs on their trucks advertising anything except their own business (*Railway Express* v. *N.Y.,* 336 U.S. 106); and a California act requiring vendors of passenger transportation to obtain Interstate Commerce commission permits. But the high court by a 5 to 4 vote knocked out an order of the New York Agricultural commission denying additional milk receiving facilities within the state to an interstate milk dealer. The denial had been based solely on the ground that such additional facilities would subject other dealers to competition and would take supplies needed locally. There was no pretense that public health and safety required such an order. The majority opinion criticized the trend of the states toward "Balkanization." "Every consumer," said Justice Robert H. Jackson, "may look to the free competition from every producing area in the nation to protect him from exploitation by any. Such was the vision of the Founders" (*Hood & Sons* v. *DuMond,* 336 U.S. 525).

Civil Rights.—Two 5 to 4 decisions of the supreme court again illustrated the difficulty of drawing a legal line between the use and abuse of free speech. The court reversed the conviction of Rev. Arthur Terminiello for violating a Chicago ordinance which defines disorderly conduct as including activities which tend to a breach of the peace. The defendant had spoken at a meeting sponsored by Gerald L. K. Smith. He denounced Communists, Russians, Eleanor Roosevelt, Henry Wallace and the Morgenthau plan, while praising Francisco Franco. A mob of hecklers demonstrated outside the meeting hall, and the defendant was arrested for having stirred up the disturbance through his speech. The trial court charged that any misbehaviour which "stirs the public to anger, invites dispute, brings about a condition of unrest or creates a disturbance" may be a breach of the peace. But a majority of the supreme court disagreed. "Speech is often provocative and challenging," said Justice Douglas. "Freedom of speech, though not absolute, is nevertheless protected against censorship or punishment, unless shown likely to produce a clear and present danger of a serious substantive evil" (*Terminiello* v. *Chicago,* 335 U.S. 890).

In the second case, the high court upheld an ordinance of Trenton, N.J., banning the use of sound trucks which emit "loud and raucous noises." It was within the discretion of a city to regulate the use of loud speakers, said the majority of five justices. The unwilling listener "is practically helpless to escape this interference with his privacy except through the protection of the municipality." The majority distinguished this case from last year's *Saia* case ruling which voided a Lockport, N.Y., ordinance because it gave the chief of police discretion to license the use of loud speakers in public without setting up standards to guide him (*Kovacs* v. *Cooper,* 336 U.S. 77).

An effort to compel a school district in the state of Washington to provide transportation for children attending parochial schools was rebuffed by the state supreme court, which ruled that such action would violate a state constitutional inhibition against the use of public money for the support of a religious

IRST TWO WOMEN practising at the bar in England ever to attain the rank king's counsel. They are shown after being sworn in before the house of rds in April 1949

tablishment (*Visser* v. *Nooksack Valley School District*, 207 . 2d 198). (*See* also Civil Liberties.)

Criminal Law.—Eleven U.S. Communist party leaders were nvicted of conspiring to advocate the overthrow of the U.S. overnment by force in violation of the sedition provisions of e Alien Registration act of 1940. The record of the trial, which sted nine months, ran to more than 5,000,000 words. Judge arold Medina not only imposed prison sentences and fines pon the defendants but held their lawyers guilty of contempt court for persistently obstructive tactics during the trial. mong the important issues to be determined on appeal were e constitutionality of peacetime sedition laws, whether the dge should have instructed the jury to apply the "clear and esent danger" test to the defendants' activities, and the lee-ay to be allowed defense counsel in such trials.

The first trial of Alger Hiss, former state department official, arged with committing perjury before a grand jury, fizzled it when the jurors failed to agree. The case arose out of arges made by Whittaker Chambers, formerly a senior editor *Time* magazine, before the house of representatives commit-e on un-American activities, that Hiss had given him copies of cret documents in 1938 to be turned over to soviet agents. iss countered by suing Chambers for defamation, whereupon hambers led federal agents to a hollow pumpkin on his farm om which he produced microfilms of papers alleged to have en handed out by Hiss, who was then indicted for perjury denying complicity with Chambers in his confessed spy activi-es. On his second trial, which lasted beyond the year's end, iss was found guilty.

In other cases arising out of hearings before the committee un-American activities, circuit courts upheld convictions of ntempt of congress against witnesses who had refused to ate whether or not they were members of the Communist rty. The supreme court dodged one aspect of this issue by smissing the appeal of Gerhart Eisler, German-born Commu-st, from a contempt sentence for refusing to testify before that mmittee. The case was moot, the court said, because Eisler d fled from the U.S. to escape the consequences of this and other criminal conviction (*Eisler* v. *U.S.*, 338 U.S. 189). The preme court did, however, pass upon an important aspect of congressional committee procedure. By a 5 to 4 vote it set aside the conviction of Harold R. Christoffel, former head of United Automobile Workers local union, charged with lying to the labour committee of the house of representatives about his Communist connections, because a quorum of the committee was not present at the time the alleged perjury was committed (*Christoffel* v. *U.S.*, 338 U.S. 84).

In contrast with the widespread interest in the antired prosecutions, the public seemed only mildly concerned over the trials and convictions of Mildred Gillars (Axis Sally) and Iva Toguri D'Aquino (Tokyo Rose) for treason in giving aid and comfort to the enemy through radio broadcasts designed to lower the morale of U.S. soldiers and sailors in World War II.

A concurring opinion by Justice Jackson in the reversal of a conviction for conspiracy to violate the Mann act promised to become important when the sedition conspiracy case against the 11 Communist leaders reached the supreme court on appeal. Loose practice in the use of conspiracy charges, he said, "constitutes a serious threat to fairness in the administration of justice" (*Krulewitch* v. *U.S.*, 336 U.S. 440).

A majority of the supreme court justices made it clear that the 14th amendment did not forbid the use in state courts of evidence obtained by unlawful search and seizure. Conviction on such evidence in a state court is not a denial of due process (*Wolf* v. *Colorado*, 338 U.S. 25). In another search and seizure case the court reaffirmed previous rulings that federal agents might legally search a car without a warrant where they had proper cause, based on long observation, for believing that the driver was violating the Liquor Enforcement act (*Brinegar* v. *U.S.*, 338 U.S. 160). But the federal government was unsuccessful in its effort to justify the use of evidence taken from a defendant's hotel room during an illegal search by local police. Even though the search had not been made upon the instigation of the federal agent, the evidence was still tainted with illegality (*Lustig* v. *U.S.*, 338 U.S. 74).

The court reiterated its view that where ignorance, youth or other incapacity of a defendant makes a trial without counsel unfair, the defendant is deprived of liberty without due process of law. But the court made it clear that due process does not guarantee counsel in every criminal case. It depends upon the situation of the defendant (*Gibbs* v. *Burke*, 337 U.S. 773).

In three cases the court reversed convictions by the courts of South Carolina, Pennsylvania and Indiana which were based upon confessions obtained after long and continued grilling of the defendants (*Harris* v. *South Carolina*, 338 U.S. 68; *Turner* v. *Pennsylvania*, 338 U.S. 62; *Watts* v. *Indiana*, 338 U.S. 49).

The high court again excoriated the state of Illinois for failing to provide procedures by which persons claiming to be wrongfully convicted might have their cases reviewed. The court directed the Illinois courts to reconsider eight cases in which habeas corpus had been denied to prisoners. Illinois might set up any procedure it chose for such review, but it would have to set up some sort of procedure (*Young* v. *Ragen*, 337 U.S. 235). Following this decision, the Illinois legislature passed a law under which any convicted prisoner, who believed his federal or state constitutional rights had been violated, might file a petition and obtain a hearing in the court where he was tried. If the judge denied his plea, he might then appeal to the Illinois supreme court within six months.

The Michigan legislature abolished the state's one man grand jury system which had enjoyed a life of 32 years. A new law set up a three judge grand jury system to operate under strict limitations. In signing the bill the governor said that if the new system did not work, the traditional 23 man grand jury would still be available.

Family Relations.—A dispute between two women over the property of a dead man split the supreme court 5 to 4. Each contestant claimed a widow's share in the decedent's estate. He had left his first wife in Connecticut and obtained a divorce from her in Nevada upon service by publication in proceedings in which she took no part. He then married wife no. 2 in Nevada and moved with her to California, where he died six months later. A Connecticut court decided that the Nevada divorce did not cut off the rights of wife no. 1 in her husband's property because he had not established a bona fide residence in Nevada. The contention of wife no. 2 that the full faith and credit clause of the federal constitution required Connecticut to recognize the Nevada decree was rejected by a majority of the supreme court, which upheld the Connecticut decision. In a sharply dissenting opinion, Justice Jackson revived the epithet "divisible divorce," coined in 1948 in the *Estin* case, 334 U.S. 451, to characterize "a divorce good to end a marriage but invalid to affect dependent property rights." He advocated the adoption of a consistent policy by the court in applying the full faith and credit clause which would put an end to a situation which permitted a man "to leave a wife who cannot become his widow and to leave a widow who was no longer his wife" (*Rice* v. *Rice*, 336 U.S. 674).

The South Carolina legislature ratified a constitutional amendment approved by the voters, granting divorce on any of four grounds—adultery, desertion, physical cruelty and habitual drunkenness. The state thus lost its unique distinction of being the only one in the union which did not permit divorce. Several other states eased their divorce requirements. Among them were Idaho, which reduced from six years to three the period of insanity requisite as a ground for divorce; Wyoming, which made it possible to obtain a divorce on the ground of a spouse's incurable insanity after a residence in that state of 60 days; Maryland, which added as grounds for absolute divorce, imprisonment for felony where the sentence is at least three years; and Washington, which cut the time required for final divorce from seven to three months, but at the same time set up a family court for the purpose of attempting reconciliation where minor children were involved.

The corridors of flight from alimony payments were blocked by ten states and the Virgin Islands through the adoption of reciprocal nonsupport laws compelling the support of dependent wives and children by runaway husbands. These laws were modelled after a 1948 New York statute, sponsored by the Council of State Governments. Such acts authorized state courts to hear testimony in proceedings to compel support when the husband lives in another state having a similar law. The record of the hearing is then forwarded to the state where the husband lives, and the proper court is asked to fix the amount he must pay. The states enacting such laws in 1949 were Connecticut, Delaware, Illinois, Indiana, Iowa, Maine, New Hampshire, New Jersey, Oklahoma and Wisconsin.

Housing and Rent.—Tenants in rent control areas were given a respite from rent increases until June 30, 1950, under the Rent Control act of 1949, subject to the risk of decontrol by state legislation or by local governments after a public hearing and the approval of the governor. The housing expediter was required to fix rents so that they would return to landlords a "fair net operating income . . . in so far as possible." The expediter was authorized to sue for triple damages in case of rent overcharges and to decontrol so-called luxury apartments when he found that it would result in converting a single unit into two or more dwelling units. The act also recontrolled trailer camps and nontransient hotel apartments in New York city and Chicago.

The supreme court upheld the new rent control law. The provision granting states and cities local option to set up their own controls was not an unlawful delegation of legislative power.

Labour.—Organized labour lost substantial ground under the impact of adverse court decisions. In two sweeping opinions by Justice Hugo L. Black the supreme court rejected union attacks on state anti-closed shop laws. The court ruled that the Right to Work amendments to the constitutions of Arizona and Nebraska and a North Carolina statute, making it unlawful to deny employment to any person because he is or is not a member of a labour organization, do not violate the federal constitution. State laws prohibiting discrimination between union members and nonmembers do not impair the obligation of contracts nor deny free speech, free assembly, due process or the equal protection of the laws (*Lincoln F. L. U.* v. *N. W. I. & M. Co.*, 335 U.S. 525; *A.F. of L.* v. *Am. S. & D. Co.*, 335 U.S. 538). Similarly the high court refused to permit an ice peddlers' union to justify illegal picketing in Kansas City, Mo., as an exercise of freedom of speech. Such picketing was a violation of a state law against restraints of trade, ruled a Missouri court, granting an injunction over the union's protest that the U.S. supreme court had approved of peaceful picketing as a proper exercise of free speech. The supreme court, however, said that its prior sanctions of peaceful picketing did not extend to activities in violation of state laws (*Giboney* v. *Empire Ice Co.*, 336 U.S. 490). The high court justices also turned down a plea for the reversal of an Arkansas conviction of violating a state law making it a crime to assemble near a place where there is a labour dispute and to attempt by force to prevent anyone from engaging in any lawful vocation. Such a law does not infringe the right of assembly (*Cole* v. *Arkansas*, 338 U.S. 345).

Three supreme court cases involved alleged conflicts between the jurisdiction and powers of the Wisconsin Employment Relations board and the NLRB. In the first the court ruled that the latter agency had exclusive jurisdiction to certify union bargaining representatives in interstate industries even though it had not exercised such authority (*La Crosse Telephone Corp.* v. *Wis. E.R.B.*, 336 U.S. 18). On the other hand, the court upheld the action of the Wisconsin labour board ordering an employer to stop giving effect to a maintenance-of-membership clause in a contract with a union because it violated a provision of the state Employment Peace act making it an unfair labour practice to enter into an all-union agreement without the aproval of a majority of employees. The state law was not in nflict with national policies enacted by congress (*Algoma P.* *V. Co.* v. *Wis. E.R.B.*, 336 U.S. 301). The Wisconsin board as again sustained in ordering a union to desist from intermit-nt and unannounced work stoppages caused by calling special eetings of members during working hours without warning. he ruling of the state agency that such practices were unfair d not encroach on rights of workers to strike under federal ws nor impose involuntary servitude nor invade rights of free peech or assembly, according to a majority of five supreme ourt justices (*International Union* v. *Wis. E.R.B.*, 336 U.S. 45).

Labour scored in two cases before the supreme court involv-g unfair practices. An NLRB order directing a North Caro-na cotton mill to permit the use of a company owned meeting all in a company controlled town for union organization meet-gs was sustained (*NLRB* v. *Stowe Spinning Co.*, 336 U.S. 26), as was also an NLRB ruling that it was unfair for an em-loyer to put into effect a general wage increase substantially reater than that offered to union representatives during nego-ations which had reached an impasse (*NLRB* v. *Crompton-ighland Mills*, 337 U.S. 217). In a third case, however, the LRB was told it had erred in finding an employer guilty of nfair practices when he discharged employees on demand of a nion which had expelled them from membership because they ad been active on behalf of a rival union. The employer was arrying out the terms of a closed shop contract (*Colgate Co.* v. *LRB*, 338 U.S. 355).

Veterans Seniority.—In two decisions the supreme court ealt with job seniority rights of veterans under section 8 of the elective Service act. Seniority continues beyond the expiration f the first year of a veteran's re-employment, the court held. he provision of the law protecting a veteran against discharge ithout cause within one year after restoration to his former osition is not a statute of limitations and does not bar him rom bringing suit to enforce seniority rights after the year's nd (*Oakley* v. *L. & N. R. R. Co.*, 338 U.S. 278). But the hrase "without loss of seniority" should be construed as it is onventionally used in the processes of collective bargaining, he supreme court told another veteran who complained because e was laid off while union chairmen were kept on the job under n agreement with employer which gave them top seniority over l other employees holding similar jobs. The collective bargain-g agreement was not in conflict with section 8 of the Selective ervice act. Seniority provisions in such a contract took prece-ence over service seniority (*Aeronautical District Lodge* v. *ampbell*, 337 U.S. 521).

Wages and Hours.—The national minimum wage was raised rom 40 cents to 75 cents an hour through amendments to the air Labor Standards act. The new provisions also removed rom wage-hour coverage the employees of small newspapers, axicab companies and sawmills; changed the methods for deter-ining minimum wage and overtime requirements; tightened hild labour restrictions; authorized the administrator to sue on ehalf of workers for unpaid back wages; broadened the exemp-ons for laundries and bakeries; and removed overtime pay equirements for certain work in fish canneries, railroad and ucking companies. Congress also amended the law as to over-me compensation, so that extra pay for overtime work will o longer be deemed part of the employees regular rate in figur-g overtime. The change was made retroactive to cut off claims or "overtime on overtime" pending in court.

Taxation.—The supreme court told the tax court to take a roader view in considering the status of family partnerships or income tax purposes. The tax court had ruled that the en-re income from a cattle business run by a Texas rancher and his four sons as partners was taxable solely to the father. In so holding, the tax court had said that division of income among partners should not be recognized as valid unless each partner contributed "vital services" or "original capital" to the common business, phrases which the tax court had culled from the 1946 opinions of the supreme court in the *Tower* and *Lusthaus* cases. This was a misconstruction of those decisions, said the supreme court. The concept of a partnership for tax purposes is the same as the common law concept; namely, that the partners really intend "to join together for the purpose of carrying on business and sharing in the profits or losses or both" (*Comm'r.* v. *Culbertson*, 337 U.S. 733). (*See* also TAXATION.)

The supreme court also further restricted the use of the living trust as a means for reducing estate taxes. Overruling a 1930 precedent, the court held that the corpus of an irrevocable trust in which the settlor reserved a life income was subject to the federal estate tax upon his death, since the trust transfer did not become complete until that time (*Comm'r.* v. *Church*, 335 U.S. 632). In a companion decision the court said that if there was any possibility under the terms of a trust that the corpus might ever revert to the settlor, even though not so expressed, the trust property would be subject to the estate tax upon his death. This was an important extension of the *Hallock* decision, which held that an express reservation of a reversionary interest would make the trust property taxable (*Comm'r.* v. *Spiegel*, 335 U.S. 701).

The supreme court maintained its liberal attitude toward state taxation alleged to be in conflict with the federal constitution. In two opinions the court held that state and local governments could legally tax property intended for exportation as long as it had not entered "the export stream." The export-import clause of the federal constitution confers immunity from local taxation only upon property actually in the process of being exported. Thus gasoline held in storage for 15 months at Dearborn, Mich., in tanks marked "For Export Only" was held subject to a city ad valorem tax (*Joy Oil Co.* v. *State Tax Comm.*, 337 U.S. 286). A cement plant bought by a foreign company for dismantling and shipment to South America remained subject to local property taxes until the dismantled parts were delivered to a carrier for shipment. Intent to export is not enough to bring property within the constitutional immunity (*Empresa* v. *Merced*, 337 U.S. 154).

The supreme court also sustained taxes assessed by Oklahoma against the lessees of allotted and restricted Indian lands, overruling prior decisions to the contrary (*Oklahoma* v. *Texas Co.*, 336 U.S. 342); approved a Louisiana ad valorem tax on barges and tugboats based on the ratio between the number of miles of the carrier's lines within the state and its total line-miles (*Ott* v. *Miss. Barge Line*, 336 U.S. 169); and upheld a Mississippi privilege tax on an interstate pipe-line company measured by gross receipts from the operation of a pipe line within the state (*Interstate Pipeline Co.* v. *Stone*, 337 U.S. 662). But the court held that an Ohio tax on intangible property, which discriminated against foreign corporations, violated the equal protection clause (*Wheeling Corp.* v. *Glander*, 337 U.S. 562), and it also struck down a Wisconsin emergency tax on inheritances, in so far as it was measured by tangible property outside the state (*Treichler* v. *Wisconsin*, 338 U.S. 251). (*See* also NATIONAL LABOR RELATIONS BOARD; UNITED STATES.)

(M. DN.)

Public Law in Europe and the British Commonwealth.—In this field the most important developments of 1949 were the adoption by the parliamentary council of the basic law for the Federal Republic of Germany, and by the constituent assembly of India of a constitution based on a draft prepared by its drafting committee under the chairmanship of B. R. Ambedkhar, together with the finding and acceptance by the commonwealth conference of the ingenious formula whereby India, although proclaiming her intention to be "a sovereign independent republic" yet remained within the British Commonwealth of Nations with its "common allegiance to the crown." In Israel, the adoption of a draft constitution was being debated; and in Pakistan, an agenda was being debated for a conference to establish a constitution.

The basic law for western Germany was, as its full title implies, founded on a division between the federation on the one hand and the provinces, or *Länder,* on the other. The first section of the basic law enumerated a number of basic rights. These ranged from such general statements as that "The dignity of man shall be inviolable" (article 1) and "Everyone shall have the right to the free development of his personality" (article 2) to relatively precise statements such as that "Secrecy of the mail . . . shall be inviolable. Restrictions may be ordered only on the basis of a law" (article 10) and "The dwelling shall be inviolable. Searches may be ordered only by a judge or in the event of imminent danger by other authorities provided by law" (article 13). In their affirmation of equality before the law, freedom of expression of opinion and freedom of assembly, and in their insistence on the sanctity of the family, these articles expressed a reaction against totalitarian ideas which was the most significant feature of this section. In articles 14 and 15 there was, too, an interesting statement of a compromise between individualist and Socialist ideas; article 14 stated that, subject to certain limitations, "Property and the right of inheritance shall be guaranteed," whereas article 15 provided that "Land and landed property, natural resources and means of production may, for the purpose of socialization, be transferred to public ownership . . . by way of a law which shall regulate the nature and extent of compensation."

Section II regulated relations between the federation and the *Länder*. It declared that Germany was a democratic and social federal state; it gave the federation power, by legislation, to transfer sovereign powers to international institutions; it provided (article 28) that "The constitutional order in the *Länder* must conform to the principles of the republican, democratic and social state based on the rule of law . . . In the *Länder, Kreise* and *Gemeinden* the people must have a representative assembly resulting from universal, direct, free, equal and secret elections" and (article 31) that "Federal law shall supersede *Land* law," which presumably meant that in the event of conflict or mutual repugnancy federal law should prevail. Section III regulated the composition, powers and duties of the Bundestag and section IV provided similarly for the *bundesrat*. (*See* also GERMANY.)

The constitution of India, due to come into force in Jan. 1950, presented certain points of resemblance with the basic law for the Federal Republic of Germany; but the problem with which it had to deal was in its nature and its history even more complex than that of a constitution for Germany.

A preamble declared the resolve of the people of India to constitute India into a sovereign democratic republic and to secure to all its citizens justice, liberty, equality and fraternity as there defined. Part I provided that India should be a union of the states specified in the first schedule, comprising the former governors' provinces, the former chief commissioners' provinces and the former Indian states, parliament having the power to add to their number or to alter their boundaries. Part II dealt with the complex problem of citizenship, which it conferred on (1) every person who or either of whose parents or any of whose grandparents was born in the territory of India and who had not made his or her permanent abode in any foreign state after April 1, 1947—a provision which would seem to raise immediately the question whether a country in the commonwealth is a "foreign state"; and (2) every person who had his domicile in the territory of India. There was a proviso that such a person must not have acquired the citizenship of any foreign state before the date of commencement of the constitution.

Part III dealt with fundamental rights. Included in these were rights of equality, such as the prohibition of discrimination on grounds of religion, race, caste or sex; equality of opportunity in matters of public employment; the abolition of untouchability; freedom of speech; and the prohibition of the employment of children under 14 in factories, mines or any other hazardous employment; rights relating to religion, affirming that all persons were equally entitled to freedom of conscience and the right freely to profess, practise and propagate religion; and rights to constitutional remedies; that is, to move the supreme court for the enforcement of rights provided by the constitution. Part IV had the unusual title of "Directive Principles of State Policy." These included (article 31) the imposition on the state of the duty to secure its citizens adequate means of livelihood, that ownership and control of the material resources of the community should be equal pay for equal work for both men and women.

Part V was entitled "The Union." It provided, among other things, for the election of a president by a college consisting of elected members of both houses of parliament and of elected members of the legislatures of the states for a term of five years and of a vice-president who is ex officio chairman of the council of states. All executive business was to be done by members o the council of ministers in the president's name. This same part provided for a parliament of two houses: the council of states with 250 members, 15 nominated by the president, the res representatives of the states; and the house of the people, with not more than 500 members directly elected by the voters.

United Kingdom Case Law.—Consideration is given below to cases of exceptional public interest and to litigation that resulted in the superior courts revising or modifying doctrines that were applied by the courts below; to cases that appeared to have arisen from, and to throw light upon, novel developments in social or economic life; and to one or two decisions which, however unexceptionable in law, appeared to have raised difficult problems in the spheres of ethics, morality or con science.

Of the litigation of the first of the above categories, namely that of exceptional public interest, the outstanding example was *The Commonwealth of Australia and Others* v. *The Bank o New South Wales and Others* (decision reported in the *Times* Oct. 27, 1949). This was an appeal—or rather it was a consoli dation of five appeals—to the judicial committee of the privy council from a majority decision of the high court of Australia. It arose out of section 46 of the Banking act, 1947, part o which stated that "a private bank shall not, after the com mencement of this act, carry on banking business in Australia except as required by this act," and the effect of which was t nationalize banking in Australia. The high court of Australia held that this section contravened section 92 of the constitution of the commonwealth of Australia, which provided that "trade commerce and intercourse among the states . . . shall be abso lutely free." The privy council, although affirming the high court of Australia's decision on this point, decided the appeal in favour of the respondents on a preliminary point, namely that for an appeal to lie in a matter of this sort, a certificate of the high court was required. The duration of this appeal namely 36 days, constituted a record, at least for the privy council.

Two other cases that deserve mention in this category ar

Krajina v. Tass Agency (1949 2 All England reports 274) and Tamlin v. Hannaford (1949 2 All England reports 327). In the ormer, the court of appeal affirmed the decision of a judge and master setting aside service of a writ for an alleged libel pubished by the agency on the ground that it was an organ of the government of the U.S.S.R. and as such entitled to sovereign mmunity from the process of the English court. In the latter it was held that the British Transport commission was not a ervant or agent of the crown, and its property was therefore as much subject to the Rent Restriction acts as the property of ny other owner.

Of the second category of litigation, namely that which reulted in a superior court revising a doctrine laid down by a ower court, and long accepted as good law, the most important xample in 1949 was *Hill* v. *William Hill* (*Park Lane*) *Ltd.* (1949 2 A.E.R. 452). In this case the appellant had agreed to pay the amount of a bet he had lost in consideration of the bookmakers to whom he was to pay it refraining from reporting him to Tattersalls for nonpayment. A majority of the house of ords, overruling the decision of the court of appeal in the wellknown case of *Hyams* v. *Stuart King* (1908 2 K.B. 696) held hat the appellant's promise was to pay money won upon a wager within section 18 of the Gaming act, 1845, and the conract was therefore unenforceable.

R.E.L. v. *E.L.* (1949 Probate division 211) was an example of the third category of case, arising from, and throwing light upon, a novel social development. It was there held that the act that a wife petitioner had been artificially inseminated with her husband's seed was no bar to her obtaining a decree of nullity on the ground of his incapacity.

The fourth class of case, where there appeared to be some question of a clash between good law on the one hand and good ethics or good sense was, in the view of some, exemplified by the decision of the house of lords, affirming that of the court of appeal, in *Gilmour* v. *Coats and Others* (1949 Appeal cases 426). Following a long line of authority in charity cases, t was held that the necessary element of public benefit was acking in a gift made to cloistered nuns in the belief that their prayers would benefit the world at large; and that the necessary element of public benefit being lacking, the gift was not a valid charitable trust. This state of the law was held by others to mpose a restriction on one kind of charity that did not well accord with the liberal interpretation of the rules respecting charities where animals were concerned, although here too, of course, the consideration of public benefit was paramount. (*See* also AGRICULTURE; BANKING; BUSINESS REVIEW; CONSUMER CREDIT; INTERNATIONAL COURT OF JUSTICE; INTERNATIONAL AW; PATENTS; PUBLIC UTILITIES; RELIEF; TAXATION; WAR CRIMES.)

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FILMS OF 1949.—*State Legislature* (Academy Films); *The Supreme ourt* (Coronet Instructional Films). (W. T. WE.)

awn Bowling.

The National tournament was held in Chicago, Ill., July 23–27, 1949. In the rinks (four-man teams) events the winners were: first place (Rettie Memorial trophy)—L. D. McArthur (skip), Roger McArthur, r., Roger McArthur, Jr. and Joseph Ferguson, Washington Park club, Chicago; second place (Chicago trophy)—John Proctor (skip), David Campbell, Martin F. Carlson and Wilam D. Smith, Columbus Park club, Chicago; third place (Wisconsin trophy)—Alex Stewart (skip), George White, Charles Cowell and A. A. McCready, Columbus Park club, Chicago.

Doubles winners were: first place (California trophy)—David Campbell (skip) and Martin F. Carlson, Columbus Park club, Chicago; second place (Lakeside trophy)—Roger McArthur, Sr. (skip) and Roger McArthur, Jr., Washington Park club, Chicago; third place (Western New York trophy)—Harry Breckenridge (skip) and Robert Bowling, Detroit East Side club, Detroit, Mich.

Singles winners were: first place (National Singles trophy)—John Proctor, Columbus Park club, Chicago; second place (Metropolitan New York trophy)—Orrin L. Evans, Lakeside club, Chicago.

Officers of the American Lawn Bowling association (United States) for 1949 were: W. G. Hay, president; T. W. Gardiner, secretary, 8106 S. New Hampshire Ave., Los Angeles 44, Calif. (L. PR.)

Lawn Tennis: *see* TENNIS.

Lead.

The lead output of the major producing countries and the estimated world total are shown in Table I.

Early in 1949 a sharp break in prices took place due to increased production which brought supply ahead of demand.

Table I.—*World Smelter Production of Lead*

(Thousands of short tons)

	1942	1943	1944	1945	1946	1947	1948
Argentina . .	22.9	26.2	21.1	23.3	17.8	22.0	23.7
Australia . .	231.8	202.3	173.1	174.6	154.0	177.6	211.4
Belgium . . .	17.9	8.8	8.5	8.0	26.2	44.6	72.4
Canada . . .	243.3	223.9	142.6	162.5	165.8	162.0	160.1
France . . .	13.7	13.7	2.1	3.0	38.3	38.1	38.4
Germany . .	154.4	173.3	154.2	?	31.9	26.8	54.1
Italy	32.0	13.7	?	0.9	15.4	19.3	29.1
Japan. . . .	29.7	35.8	8.8	13.9	5.4	9.6	11.7
Mexico . . .	212.7	234.2	196.5	221.7	151.8	240.1	214.4
Peru	41.8	47.6	42.9	44.1	40.2	36.1	38.4
Spain	45.4	40.5	34.1	35.1	35.6	37.9	24.2
U.S.S.R. . . .	110	139	120	45	55	66	?
U.S.	566.8	469.6	464.8	443.6	338.2	441.0	406.7
Total . . .	1,855	1,720	1,480	1,230	1,140	1,415	?

United States.—The salient features of the lead industry in the United States are shown in Table II, as reported by the U.S. bureau of mines.

Table II.—*Data of Lead Industry in the U.S.*

(Thousands of short tons)

	1942	1943	1944	1945	1946	1947	1948
Mine output . .	496.2	453.3	416.9	390.8	335.5	384.2	390.5
Refinery output .	566.8	469.6	464.8	443.6	338.2	441.0	406.7
Domestic ores	467.4	406.5	394.4	356.5	293.3	381.1	339.4
Foreign ores .	99.5	63.1	70.3	87.1	44.9	59.9	67.3
Imports	492.5	319.1	319.7	300.3	159.2	227.8	347.3
Exports	5.8	13.3	15.5	1.8	0.7	1.5	0.4
Secondary . . .	323.0	342.1	331.4	363.0	392.8	512.0	500.1
Consumption . .	1,043	1,113	1,119	1,052	956.5	1,172.0	1,133.9
Stocks, year-end							
Producers . .	117.2	129.5	125.1	161.8	189.7	128.0	146.8
Consumers . .	81.7	115.2	86.9	102.9	41.1	91.3	119.2

While mine output showed little improvement in 1948, and refinery output declined 8%, this trend was reversed in 1949. The mine total was stepped up to 311,281 tons in the first three quarters of 1949, while the primary refinery output advanced to 399,139 tons.

Canada.—The output of primary lead in Canada increased from 161,668 tons in 1947 to 167,251 tons in 1948, but operations were slowed down in 1949, the total for the first eight months being 98,452 tons. (*See* also MINERAL AND METAL PRODUCTION AND PRICES.) (G. A. RO.)

League of Women Voters of the United States: *see* SOCIETIES AND ASSOCIATIONS.

Leather.

U.S. leather production continued a slightly declining trend throughout 1949, with the average monthly output of all major types well below that of 1948. With the exception of calf and kip leathers, however, the in-

Average U.S. Monthly Leather Production

(000's omitted)

	1949	1948	1947	1946	1945	1931–39 Inclusive
All cattle hides (including kips for side leather)	1,964	2,173	2,402	2,253	2,297	1,628
Calf and whole kip	832	873	1,039	907	970	1,070
Goat and kid	2,907	2,907	3,099	2,011	2,002	4,000
All sheep and lamb.	2,371	2,371	2,594	3,998	4,370	2,800

1949 figures are based on an average of the first nine months' production. Compiled from data of the Tanners Council of America and the U.S. Bureau of the Census.

dustry maintained a production pace well above the prewar level based on 1931–39 averages. Demand for all leathers continued good throughout the year, and stocks of finished leathers in tanners' hands remained at very low levels.

There was little change in the stringencies of raw stock supplies in 1949, as imports of hides and skins remained unsatisfactory because of world economic and political conditions. However, the domestic hide and skin supply situation had been steadily improving, and U.S. tanners were each year becoming less dependent upon raw stock imports.

During 1941, Argentina exported to the U.S. 136,000 tons of hides, which constituted almost 50% of total U.S. hide imports. An abrupt decline in market prices caused a large part of the Argentine offerings to be withdrawn in 1949, and U.S. imports dropped 90% from the 1948 level. As these imports represented, for the most part, high-grade raw stock, the lack affected the U.S. industry even more than the statistics indicated.

Although demand for leather continued good through the year 1949, the industry was alarmed at the tremendous rise in popularity of synthetic materials for purposes for which leather had traditionally been used. Shoe production reports by the bureau of the census revealed that synthetics had replaced leather for 35% to 40% of shoe soles and were making heavy inroads in the shoe upper leather market. These materials, chiefly rubber and plastics, were also replacing leather to some extent in the manufacture of handbags and upholstery. They dominated many of the markets formerly held by leather, and the gain was steadily increasing. Liquidation in 1949 of the 68-year-old American Oak Leather Co., one of the oldest and largest (and most successful) sole leather tanners, aroused the leather industry to a new burst of merchandising effort.

The directors of the Foundation of the Tanners Council Research laboratory authorized a grant to establish and operate a program for the analysis and testing of various leather substitutes at the council's research laboratory in the University of Cincinnati, O. The program was intended to provide more accurate and exact knowledge of other materials in order to help determine the merits of various claims.

Fred O'Flaherty, director of the council laboratory, announced the development of a new portable device which scientifically measures the amount of moisture present in hides and leather. Moisture content determines the quality of the finished leather and its workability in the manufacture of leather products. (*See* also Shoe Industry.) (R. B. B.)

Great Britain.—The leather industry in Great Britain began 1949 with its prices badly out of adjustment. Under the controls governing it, the prices for leathers most in demand were too low and those for less desirable qualities were too high. Good selections sold readily but stocks of poorer qualities accumulated on tanners' hands.

There was much agitation for greater freedom to price leather more in accordance with demand. Eventually a concession was made under which tanners were permitted to raise the prices of higher grade productions by an amount sufficient to compensate them for actual losses made by selling low grades at prices below the official levels.

Thus the overriding consideration for the industry became the prospect of some measure of decontrol. The industry contended that, if the government abandoned its policy of bulk-buying of hides and skins, tanners could then buy on private account to greater advantage, particularly in securing to each tanner the type of raw materials best suited to his production methods. The industry was confident that decontrol would result very soon in a lowering of prices.

In Sept. 1949, shoe manufacturers were demanding that leather and shoes should be decontrolled; they were confidently predicting that lower prices would follow, despite the fact that while control persisted leather prices were being subsidized to the extent of about £2,000,000 a year out of a profit made by the control on the buying of domestic hides.

The devaluation of the pound upset most price calculations and made it evident that, because most hides and skins had to be imported, dearer leather was inevitable.

A definite announcement was made in Dec. 1949 that on Jan. 1, 1950, the government would hand back to tanners the buying of a large part of the industry's raw materials and that government-bought supplies would be sold to the industry at prices about halfway between the price level before devaluation and the current world value. (C. A. Sd.)

Lebanon.

An independent Arab republic, formerly under French mandate, Lebanon is situated on the eastern Mediterranean, bounded by Syria and Israel. Area: 3,470 sq.mi. Pop. (1948 est.): 1,208,000. Religions (1947): Christian 52%, Moslem 46%, others 2%. Language: Arabic is the mother tongue of about 90% of the population, but Armenian, Greek and other languages are also spoken. Capital: Beirut (pop. 247,000). President of the republic, 1949: Sheikh Bishara al-Khuri; prime minister, Riad bey al-Sulh.

History.—On Jan. 16–19, 1949, meetings of Lebanese and Israeli representatives took place on the frontier to discuss an armistice. It received final form on March 20 and was signed on March 23 at Ras en-Naqura.

On Jan. 28 Lebanon, with Syria (*q.v.*), agreed to allow work on the Trans-Arabian pipe line, interrupted because of displeasure at U.S. support for Israel, to be resumed. Negotiations with Syria on the one hand and the Trans-Arabian Pipeline company on the other were completed, for subsequent ratification by the respective parliaments, on Feb. 5.

A treaty of friendship and commerce with Italy was signed at Beirut on Feb. 15. Economic and political relations with Syria deteriorated after March 30. Early in May the prime minister visited Cairo, Egypt, and Baghdad, Iraq, in an attempt to mediate in the dispute between Iraq and Egypt over the Arab league secretariat and the "fertile crescent" plan.

On June 11, following the arrest of about 300 of its members, the Syrian National party in Lebanon was dissolved by government decree and its headquarters searched and sealed. It was alleged to have made preparations for an armed revolt. Early in July the leader of the party, Anton Saadeh, who took refuge in Damascus, Syria, and was received by Husni ez-Zaim, staged attacks on police posts in Lebanon and scattered groups of his party followers made armed raids from Syria along the frontier. It was reported that the prime minister appealed to Egypt, which intervened with ez-Zaim. Saadeh was arrested in Damascus on July 7 and handed over by the Syrian authorities to the Lebanese police. In Lebanon he was summarily tried, sentenced and executed the next morning. On July 16 a military court in Beirut tried 68 adherents of the National Syrian party, of whom 12 were sentenced to death and 53 to terms of imprisonment varying from three years to life. More than 800 others were reported to be in prison. Two days later the government closed the offices of the Phalanges Libanaises (al-Katayeb), making 13 arrests and confiscating arms. (C. He.)

Education.—(1946–47) Schools: state 631, pupils 53,190; private 815, pils 64,769; foreign 306, pupils 50,111; universities (1948–49) 2, dents 5,110.

Finance and Banking.—Budget: (1948 est.) balanced at £L. 67,000,0; (1949 est.) balanced at £L. 75,000,000. Currency circulation: arch 1949) £L. 185,000,000; (March 1948) £L. 201,000,000. Gold rerve of the Bank of Syria and Lebanon (June 1949): U.S. $2,800,000. nk deposits: (Dec. 1948) £L. 94,000,000, (Dec. 1947) £L. 205,000,0. Monetary unit: Lebanese pound with an official exchange rate of cents U.S. (Nov. 1949).

Foreign Trade.—(1948, with Syria). Imports £L. 468,000,000, exports . 79,000,000.

Transport and Communications.—Roads (1947): 2,068 mi. Licensed otor vehicles (Dec. 1948): cars 9,100, commercial vehicles 4,300. ilways (Dec. 1948): 130 mi.

Agriculture.—Main crops (metric tons, 1947): wheat 50,000; barley ,000; maize 12,000; potatoes 32,000. Fruit production (metric tons): apes (1946) 80,000; oranges and tangerines (1947) 40,000; lemons, nes, etc. (1947) 25,000; olives (1946) 35,000. Livestock (Dec. 1947): ttle and buffaloes 22,000; sheep 21,000; horses (Dec. 1946) 8,000; ses 25,000.

eeward Islands. This British colony consists of a group of islands in the Caribbean. Politically is divided into four presidencies: Antigua (with Barbuda), . Christopher-Nevis (with Anguilla), Montserrat and the Virn Islands. The total area is 423 sq.mi.; total pop. (mid-1948 t.): 109,000. Governor in 1949: Earl Baldwin of Bewdley.

History.—It was announced in April 1949 that the secretary state for the colonies had agreed to certain constitutional anges, including the introduction of adult suffrage (subject to simple literacy test only) at the next election for the legistive council, and the removal of the property qualification for candidate, subject to further examination of the existing arngements for deposits which candidates were required to make.

The reports of the commission appointed in July 1948, to quire into the organization of the sugar industry of St. Kitts d Antigua were published in Nov. 1949. Each contained a inority report recommending the nationalization of the inistry. The majority reports recommended, *inter alia*, a vigous campaign for the improvement of rural housing; governent responsibility for housing sugar estate workers; a wages ard or council for the industry and a joint consultative asmbly for the industry in St. Kitts; a land utilization survey; construction of the cost-of-living index; review of the wholele and retail profit margins; and consolidation of basic wage tes, amendments and cost-of-living bonuses in Antigua.

Leeward Islands

	Antigua	St. Christopher-Nevis	Montserrat	Virgin Islands
venue	B.W.I. $2,207,672*	B.W.I. $1,759,170†	B.W.I. $439,573*	B.W.I. $224,723*
penditure	B.W.I. $2,577,183*	B.W.I. $1,816,029†	B.W.I. $591,799*	B.W.I. $217,405*
ports	£1,034,929§	B.W.I. $4,103,384‡	B.W.I. $908,540‡	B.W.I. $254,880‡
ports	£465,582§	B.W.I. $4,418,877‡	B.W.I. $416,882‡	B.W.I. $156,326‡

*1949 est. †1948 est. ‡1948. §1947.

The currency is the British West Indies dollar, valued at .33 cents U.S. as of Nov. 15, 1949. (Jo. A. Hn.)

egislation: *see* Law; United States. *See* also articles on dividual states.

emons: *see* Fruit.

eopold III (1901–), king of the Belgians, was born at Brussels Nov. 3; he acceded to the throne 1934. In World War II, after a courageous though vain restance by the Belgian army, of which he was commander in ief, to the German invasion launched on May 10, 1940, the ng capitulated on May 28. Against the views of his governent, he decided not to leave his country and retired to the stle of Laeken. On June 7, 1944, Leopold left Brussels with s family under German escort for internment at Hirschstein, ear Dresden, Ger., and on March 6, 1945, he was moved to robl, near Salzburg, Aust. He was liberated on May 8, 1945, the U.S. 7th army. The Belgian Social Christian party asked for his immediate return, but a section of the Liberals, the Socialists and the Communists advocated his abdication. Since the summer of 1945 King Leopold and his family had been living at Pregny, near Geneva, Switz. Leopold's insistence on resuming his throne created a deadlock in Belgian politics and the situation was not clarified by the result of the general election of June 25, 1949 (*see* Belgium). It was officially disclosed on Oct. 18 that in a letter to Gaston Eyskens, the prime minister, the king had affirmed that if the number of votes in his favour in the proposed referendum did not reach 55% of the total of valid votes cast he would abdicate in favour of his son Baudouin. (G-H. D.)

Leprosy. From all parts of the world reports in 1949 indicated the belief of leprologists that cases of lepromatous leprosy receiving the sulfones showed improvement far beyond that expected from use of other methods. Even though cures were not produced, the patients led a much more comfortable existence and complications were much less pronounced. According to one leprologist the drugs of choice were diasone and suphetrone for oral administration and promin for intravenous use. Treatment had not become universally standardized. In some geographic areas the cost of certain sulfones limited their use. Careful clinical and laboratory observations were still needed for patients receiving sulfones.

A summary of the problem of leprosy in the British commonwealth and outlines for treatment and policy were made in an official memorandum. The problem was still being attacked with increased vigour in the British colonial territories where there were an estimated 700,000 cases, principally in Nigeria. Isolation was recommended, and persons with leprosy were to be excluded from occupations which permitted others to be exposed. All people who lived with leprous persons were to be examined periodically. It was recommended that settlements be organized along modern village lines, that restrictions be kept at a minimum, and that patients not actively infectious be allowed to return home periodically. Practically all British colonies maintained settlements for the care of leprosy.

Under the administration of the U.S. navy a leprosarium was being developed on the depopulated island of Tinian. It was planned to take cases of leprosy among natives of the 120 islands in that region to Tinian for treatment. In keeping with the trend to abolish the word "leper" the institution was given the name "Hansen's Colony." A young naval medical officer volunteered for a two-year assignment in charge of the colony. At the invitation of the U.S. navy an advisory group of three physicians interested in leprosy visited the west central Pacific area. This group doubted the wisdom of placing the leprosarium on Tinian because it was too far removed from consulting medical services, and because insular isolation was considered an archaic method for controlling the disease.

Attempts to cultivate *Mycobacterium leprae in vitro* continued. Keizo Nakamura of the national institute of health in Japan published a method of culture which he initiated in 1930. The ingredients of the liquid medium given specific mention by the author were mucin from the submaxillary gland of the ox, phthiocol, vitamin B_1 and vitamin B_2. Nakamura was convinced that using material from seven cases of human leprosy definite multiplication of bacilli was obtained, and reported that subculturing was successful through the fourth or fifth transplanting. Since no previously reported method for culturing the leprosy bacillus had withstood the test of time, this new approach had to be successfully duplicated by other scientists before the results could be accepted by leprologists and bacteriologists.

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(C. H. BD.)

Leukemia: *see* CHEMOTHERAPY.

Lewis, John Llewellyn

(1880–), U.S. labour leader, was born Feb. 12 in Lucas, Ia. (See *Encyclopædia Britannica* for his early career.)

The year 1949 was marked by the 22nd miners' strike since World War I, and by the payment of contempt-of-court fines by both the United Mine Workers union and by Lewis for failure, in face of a court order, to end a 1948 strike. The union's fine was $1,400,000; Lewis' was $20,000.

When the United Mine Workers' contract with the mine operators ended on June 30, Lewis declined to accept a renewal of the 1948 contract, asking greater concessions. In a break with the miners' earlier "no contract, no work" tradition, however, he ordered the miners to work a three-day week until further notice. In September members of the Southern Coal Producers association ceased making payments to the U.M.W. welfare fund, declaring their obligation to do so ended with the end of their contract with the miners. On Sept. 19 about 480,000 miners halted work on the grounds, "no pensions, no production; no welfare, no work." Northern producers quickly pointed out that they (representing the bulk of the coal being mined) were still paying to the fund.

On Oct. 3 approximately 100,000 miners returned to work at Lewis' orders, and on Nov. 9 all the striking miners returned to work (on a three-day week) until Nov. 30, "to enhance the remote possibility of an agreement" with the producers, as Lewis put it. Critics of the union said the miners themselves were by this time murmuring, since they had not worked full-time since June, and added that Lewis feared sanctions under the Taft-Hartley Labor act—which act, however, Pres. H. S. Truman throughout 1949 never applied against the miners. By year's end, Lewis had signed new contracts with operators representing about 18,000,000 of the 600,000,000 tons of coal mined annually.

Liberal Party: *see* POLITICAL PARTIES, BRITISH.

Liberia.

Liberia, on the great western bulge of Africa, immediately north of the equator and close by the great rain forests, is Africa's only republic. It has an area of approximately 43,000 sq.mi. and is bounded on the northwest by the British colony of Sierra Leone, on the north and northeast by the French colony of Guinea and on the east by the French Ivory Coast colony.

In lieu of an official census, the United Nations' estimate of the population in 1949 was 1,600,000. The great majority of Liberians are members or descendants of the 23 indigenous tribes, plus a probable 14,000 descendants of Negro immigrants from the United States. Though English is the official language, the living languages include at least 26 tribal languages or dialects, principally from Nilotic, Bantu or Arabic bases. Monrovia, with a population estimated at 12,000, is the national capital; it is the home of a majority of the citizens of American descent.

The government and constitution of Liberia are modelled closely after those of the United States, though the right of property ownership is limited to "persons of African descent." The presidential term is eight years. William V. S. Tubman was inaugurated in Jan. 1944. During his administration, native tribal chiefs were, for the first time (1946), inducted to membership in the national legislature. Also instituted was a yearly sequence of hinterland palavers, featuring prolonged official journeys into the more remote tribal areas by the president and his staff, for forum discussions and town-meeting-style hearings of tribal grievances, needs, petitions and other local problems not attendable from the capital.

Liberia grants religious freedom to all denominations, welcomes bona fide missionary activities and admits without limitation of nationality accredited medical and other scientists.

History.—Late in 1949 the bridge spanning the St. Paul river and linking Monrovia with the western province was officially opened. Pan American World Airways reinstated international plane services which brought Monrovia within 26 hr. of New York city. Also in 1949 tangible steps were taken to open to international exports the Bomi Hills iron concessions, in which Christie-Republic Steel interests were the principal U.S. investment factors. It was estimated that there were more than 50,000,000 tons of rich surface iron ore in the Bomi area.

A corporation code and a maritime code were among the major Liberian legislative accomplishments for 1949. The same year witnessed progress in the nation's principal industry, the production of natural rubber. Firestone, largest American investor in Liberia by way of its subsidiary, the Firestone Plantations company, increased its Liberian rubber plantations to a total of 78,861 planted acres, of which about 70,000 ac. were in bearing at the year's end. Firestone's rubber production for the fiscal year ending Oct. 31, 1949, was 57,557,721 lb. Production from groves owned by 123 citizen planters was likewise substantial.

The year 1949 was also marked by the active beginning, in the Monrovia area, of the Liberian institute, an international research centre conducted by the American Foundation of Tropical Medicine to the end of acquiring and disseminating, without regard for nationality, race, creed or colour, medical findings of potential or actual world importance.

Education.—In 1949, Liberia had 88 government schools, 78 mission schools, 23 private schools and 17 tribal schools. Institutions for advanced education include Liberia college, College of West Africa, Monrovia, and Booker T. Washington institute, Kakata, which is supported jointly by the Liberian government, the United States government, Firestone and six American churches and foundations, for the agricultural and basic industrial training of sons of native chiefs and other tribes people.

Finance and Trade.—The U.S. dollar is the monetary unit of Liberia and is supplemented by Liberian fractional coins with the dollar basis freely negotiable and at par. Revenue receipts for the year ending Aug. 31, 1949, were $3,735,353.91, an increase of $678,655.28 over those of the preceding year. The external debt stood at approximately $584,000, or roughly 40 cents per capita. The internal debt was $5,050. Exports for the 12 months ending Aug. 31, 1949, were $13,527,185; imports were $9,104,870, with the United States supplying about 81% of the latter.

Industry and Agriculture.—For 1949, industrial employment, including that of the Firestone Plantations company with approximately 30,000 native employees, was estimated at 44,800. Subsistence agriculture remains the preponderant source of employment, with rice the principal subsistence crop. Rubber is the preponderant export item, with gold, piassava fibre, palm oils and kernels and kola nuts following in that order.

During 1949 the Liberia company, organized in 1947 by Edward R. Stettinius, Jr., and associates, dismissed most of its personnel and withdrew at least temporarily from active operations, pending reorganization and refinancing.

(C. M. WI.)

Libraries.

During 1949, many foreign librarians made tours of the U.S., sponsored by the war and state departments. U.S. libraries and lay groups continued to send books abroad. The United Nations Educational, Scientific and Cultural organization had two plans in operation concerning libraries: the establishment of national exchange agencies (in the U.S., the U.S. Book exchange, continued under a Rockefeller grant), and the book coupon scheme to help "soft" currency countries buy books in "hard" currency countries.

The Westchester, N.Y., Federation of Women's Clubs con

MBERS OF A GREAT BOOKS discussion group, photographed during a eting in a branch public library at Oklahoma City, Okla. Similar discussion ups were being held in libraries of more than 300 cities throughout the ited States in 1949

ted books for German libraries. CARE (Cooperative for nerican Remittances to Europe, Inc.) sent its first technical-oks package to Louvain university, Belg., library. The Inter-tional Youth library at Munich, Ger., received a two-year nt of $20,000 from the Rockefeller foundation.

Regional Co-operation.—The Carnegie corporation ap-oved a $500,000 grant to establish a midwest interlibrary cen- as a depository and bibliographic centre; Ralph T. Ester-est was named director. A similar plant was being considered the northeastern states. The 54 college and reference li-ries participating in the Farmington plan (complete coverage foreign-book acquisitions) were receiving books from nine ntries: Mexico, Norway, Sweden, Denmark, the Nether-ds, Belgium, France, Switzerland and Italy; acquisitions re uneven but improving.

States.—Most states reported increased funds during the r for state-library operation, state aid, etc. Arkansas and wa increased permissive tax levies for public libraries. Kansas, ssissippi, New Mexico and Rhode Island reported state-wide blic library surveys. New York established its first regional rary, and Vermont its fifth. New state heads included: Min-sota, Russell J. Schunck, state director of libraries; Missouri, xton P. Price, state librarian; North Dakota, Hazel Webster rnes, director of State Library commission, succeeding Lillian Cook; Tennessee, Dan M. Robinson, state librarian.

Personnel.—There still was a shortage of professionals, and arge turnover. The U.S. bureau of labour statistics issued a ease stating that the average professional salary was $2,825, nprofessional $1,925. Salary tables, usually with at least rudi-ntary classification schemes, appeared in the *Library Journal* public libraries at Monterey, Calif., Pittsburgh, Pa., Cleve-d and Toledo, O., Minneapolis, Minn., Atlanta, Ga., Newark, J., and Hartford, Conn. Vassar college, Poughkeepsie, N.Y., d an interesting scheme, and the University of California, rkeley, issued revisions.

College and Reference Libraries.—The most spectacular quisition during the year was the private papers of James swell (4,000 pieces) by Yale university library, New Haven, nn. New college library heads included: David O. Kelley, iversity of New Mexico, Albuquerque; David A. Jonah, li-rian of Brown university, Providence, R.I., with Henry B. n Hoesen becoming director of libraries; Charles E. Butler, est Virginia university, Morgantown; John E. Burke, George abody college, Nashville, Tenn.; Robert H. Muller, Southern inois university, Carbondale; N. Orwin Rush, University of Wyoming, Laramie; and Donald E. Strout, University of Denver, Denver, Colo.

Reference library appointments included: Paul Howard, chief librarian, U.S. department of the interior libraries; Foster Mohrhardt, Veterans' administration library service head; Russell F. Barnes, head of James Jerome Hill Reference library, St. Paul, Minn., succeeding Helen K. Starr, retired.

Public Libraries.—A release from the U.S. office of education, covering public libraries in cities of more than 100,000 population, showed percentage increases since 1945: 45,142,081 vol. (+23%), 9,011,703 borrowers (+11.25%), 133,283,304 books circulated (+4.23%), $45,205,592 expenditure, excluding capital outlay (+42.66%). An American Library association midsummer study showed 736 counties having county libraries. John Deferrari, who in 1947 had given the Boston Public library a $1,000,000 trust fund, added $500,000 to it in 1949.

Costs were the main concern of most public librarians during the year, with budget increases going to improved salaries. The "book-buying power" of public libraries was set at an estimated $14,000,000; of all libraries, $32,000,000. Francis R. St. John became librarian of the Brooklyn, N.Y., Public library, succeeding Milton J. Ferguson; John C. Settelmayer became librarian of the Atlanta, Ga., Public library (renamed from the Carnegie library of Atlanta), succeeding Fanny D. Hinton.

Adult services moved ahead. Sporadic attempts at censoring the collections occurred, but positive elements in the communities defended the public libraries' book-selection policies. Improved service to Negroes in the south was reported. And provision of books on medical subjects, sex, marriage, etc., for adult readers was discussed. Group services were forwarded, the library's role being more clearly defined as one of service rather than leadership. Libraries made encouraging reports on Great Books discussions; few participants dropped out, once enrolled, and most of them re-enrolled for the second year. Special groups were served: the New York Public library maintained collections of books in labour-union headquarters, with expense shared by library and union; Rutland, Vt., Public library sponsored a small business clinic series which, because of its growing popularity, was being spoken of as the "Rutland plan."

Auxiliary bodies were becoming increasingly important, particularly Friends of Libraries. Edward L. Bernays, nationally known counsel on public relations, suggested that the "Friends" become autonomous, similar to lay bodies which supply funds to fight disease. A woman's council was organized to work on special projects at the New York Public library.

Audiovisual.—Almost 200 public libraries were known to have collections of phonograph records. "Film librarian" was becoming a familiar staff title. Film festivals and workshops increased in number during 1949. The Stamford, Conn., Public library issued a report on the effectiveness of its film program in the community. Louisville, Ky., Public library had a radio broadcasting station and, in every branch library, a television receiver.

Exhibits.—The Freedom Train exhibits were installed in the national archives, Washington, D.C., for a limited period. New York state had its own Freedom Train of six specially rebuilt coaches, making a two-year tour of the state. The New York State library held an exhibition, "20,000 Years of Comics," which later moved to the Library of Congress and would eventually tour the country.

Equipment.—Mechanical equipment gained increasing popularity in 1949, especially cheaper processes for printing catalogue cards and photographic operations for registering borrowers and lending books. An A.L.A. committee was seeking standardization of bookmobiles. Microfilm, in addition to serving some of the above operations, was used in the "rapid selector," developed by the U.S. department of agriculture from principles originated by Vannevar Bush: catalogue cards, coded and "stored" on 35-mm. film, could be "scanned," and those on selected subjects rephotographed at a rate of thousands per minute. University Microfilms, Ann Arbor, Mich., announced a plan for microfilming several hundred magazines, mainly technical, so that the paper originals could be thrown away after a year or so, and the microfilms retained. Microcards were in production.

Library Schools.—The A.L.A. board of education for librarianship announced early in the summer that it would withhold approval of further curricular changes until it had studied the situation; most changes would affect the M.A. degree. The Ballard school in New York city, guided by the Special Libraries association, began training nonprofessionals. Marie Hamilton Law became director emeritus of Drexel institute's library school (Philadelphia, Pa.), Harriet D. McPherson succeeding her.

School and Children's Librarianship.—It was expected that the next few years would see more public libraries getting out of operating school libraries, because of high costs and the inequalities of personnel requirements; Wichita, Kan., Public library returned the school libraries to the schools in 1949. Eleven states had school library supervisors. Both the *New York Times* and the *New York Herald Tribune* held successful children's book festivals. (*See* also AMERICAN LIBRARY ASSOCIATION; SOCIETIES AND ASSOCIATIONS.)

BIBLIOGRAPHY.—For further information about U.S. libraries, consult *Bulletin* of the American Library Association; *Library Journal; College and Research Libraries; Library Quarterly;* Library of Congress *Information Bulletin.* Important contributions to library literature were: Robert D. Leigh, *The Public Library in the United States* and B. R. Berelson and L. Asheim, *The Library's Public* (the two general volumes of the Public Library Inquiry; others are specialized); J. H. Shera, *Foundations of the Public Library;* Library Conference, University of Chicago, *Education for Librarianship;* G. R. Lyle, *Administration of the College Library* (2nd ed.); University of Chicago Library Institute, *Youth, Communication and Libraries;* J. E. Burchard and others, *Planning the University Library Building: Library Literature, 1946–48;* Audiovisual: Gloria Waldron and Cecile Starr, *The Information Film;* American Library Association Public Relations Council, *Use of Television by the Public Library.* (K. BN.)

Great Britain.—One of the most important events of latter years was the establishment of an independent organization to provide an official current national bibliography, based on a scheme first drawn up by the Library association. The Council of the British National Bibliography was formed in March 1949 and consisted of representatives of the British museum, the Library association, the Publishers' association, the Booksellers' association, the National Book league, the Royal Society, the National Central library, the British Council, Aslib and the United Nations Educational, Scientific and Cultural organization Co-operating Body for Libraries. The editorial work was to be carried out at the British museum in close proximity to the copyright receipt office and the bibliography was to be issued in the form of a weekly booklist of all books published in Great Britain, commencing in the first week of Jan. 1950. All books were to be fully catalogued by the Anglo-American rules and classified in accordance with the Dewey decimal classification. There was also to be an annual volume containing the entries for the year, in classified order with appropriate indexes. The British National bibliography would thus form a central catalogue of the books published in Great Britain as well as a guide to the selection and purchase of books.

Another important event was the establishment of a British National Book centre at the National Central library. This became a new department of the National Central library activities which, it was hoped, would help the better distribution of books and periodicals which became available from time to time as gifts or as superfluous duplicates, by ascertaining the requirements of libraries and meeting them as far as possible. Many institutions had superfluous books which were not needed but which it would be unwise to destroy because experience had shown that other libraries might have been unable to obtain them. The British National Book centre acted as a central bureau in Great Britain to obtain and circulate information regarding redundant books. Its main object was the distribution of books among British libraries but it was co-operating with U.N.E.S.C.O. in encouraging international interchange of books and periodicals and working with U.S. and Canadian book centres operating on similar lines.

Statistics collected by the Library association showed that in the financial year 1948–49 more than £1,870,000 or approximately 9*d.* a head of the population was spent on books for public libraries in Great Britain and Northern Ireland; and the total expenditure on the service, which was available for all but about 50,000 people in the whole of the country, was about £7,705,000 or 3*s.* 2*d.* a head of the population. The number of books issued from the lending departments of these libraries for home reading was 312,000,000, about 12,000,000 more than in the previous year.

A new feature of British libraries, the recorded music collections, was further developed. Nearly 50 public libraries had established collections of phonograph records, which in most cases were available for loan to individuals but, in some places, only to musical clubs, societies and groups.

The work of restoring libraries which had been damaged during World War II proceeded slowly. The repair of the bomb-damaged music room and bookstacks at the University of London library and work on the completion of the tower were begun. Plans were approved for the rebuilding, on its original site, of the library of the Inner Temple, and in July the king opened a new temporary library adjoining the existing temporary building. The Inner Temple lost many books in the bombing of 1941 but the stock had gradually been built up to 80,000 volumes. At Edinburgh, Scot., work was resumed on the new building for the National Library of Scotland.

The Radcliffe Science library at Oxford celebrated its bicentenary on April 20 and marked the occasion by a public ceremony and a special exhibition illustrating the history of the library and the life of its founder, John Radcliffe. At Cambridge, A. F. Scholfield, university librarian since 1923, retired and his successor was H. R. Creswick, who was librarian of the Bodleian library, Oxford, from 1945 to 1948 and therefore had the unique distinction of serving as university librarian both at Oxford and Cambridge.

Europe.—U.N.E.S.C.O. continued to encourage the rehabilitation of libraries after World War II and the international and national library associations were active. The 15th session o e International Library committee of the International Fed-ation of Library Associations was held at Basle, Switz., in July hen reports were received from many national associations on e progress of the library movement. In Germany the *Bayer-che Staatsbibliothek* of Munich and the *Universitätsbibliothek* Erlangen organized a conference, attended by more than 100 legates, of the re-established Association of German Libra-ans. In Czechoslovakia, a mobile library service was intro-ıced in Prague. Based at the Prague Central library, the spe-ally fitted library vans toured and served areas which were thout any other library service.

The Norwegian Public Library law, which was passed in Dec. 47, took effect from July 1949. This law made it compulsory r communities to maintain public libraries. Provision was ade for subsidies on local effort and an interesting feature was at public libraries which were so well administered that they uld serve as model libraries or those to which study groups ere attached, could obtain an extra contribution from the vernment.

Films of 1949.—*Know Your Library* (Coronet Instructional Films). (D. C. H. J.)

bya: *see* Italian Colonial Empire.

ie, Trygve (1896–), Norwegian diplomat and United Nations official, was born July 16 in Oslo. etween 1922 and 1940 he was identified with the Norwegian bour party, as its legal adviser and later a member of its tional council. From 1935 to June 1939 he was minister of stice, then minister of commerce, in which position he helped und the Norwegian Trade and Shipping mission, which saved ost of the 1,000 ships under its control for operations on the lied side in World War II. After the German invasion of orway he went with the exile government to London, serving its minister of foreign affairs. He was reappointed minister foreign affairs of Norway in 1945. He had served as chair-an of the commission that drafted the charter for the Security uncil at the United Nations organization conference at San ancisco, Calif., and at the London meeting of the U.N. gen-al assembly he was elected secretary-general, Feb. 1, 1946.

Consistently during the postwar years he sought to follow a utral course when the U.S.S.R. and its satellite states and e nations of the west used the U.N. as a forum to air their ews in the "cold war." Lie's fourth annual report to the gen-al assembly in Aug. 1949 reported that fear of war had creased after the lifting of the Berlin blockade. He predicted at history would view the independence movements in India d Africa as more important than the "cold war." He urged equent meetings of the foreign ministers of big powers on ajor world issues. He gave as his opinion that world economic oblems could best be solved through the U.N. rather than rough blocs of nations, and viewed Pres. Harry S. Truman's an for helping underdeveloped countries through the U.N. as ne of the most heartening events of the year."

echtenstein. A small independent principality between Switzerland and Austria, Liechtenstein has area of 61.4 sq.mi. Pop. (Dec. 1948 est.): 13,000. Language: rman. Religion: Roman Catholic. Capital: Vaduz (pop. *c.* 00). Ruler: Prince Franz Josef II; prime minister: Alexan-r Frick.

History.—On July 27, 1949, the United Nations Security uncil agreed to grant the request of Liechtenstein—which was t a member of the United Nations—to become a party to e statute of the International Court of Justice.

On Sept. 12, at Lignières, France, Prince Heinrich-Marie-Vincenz-Benedikt, heir to the throne of Liechtenstein, married Archduchess Elisabeth-Charlotte, daughter of Charles of Habsburg, the last emperor of Austria and king of Hungary, and of the empress Zita, nee of Bourbon-Parma.

Finance and Economy.—Budget: (1948, actual) revenue 3,798,000 Fr., expenditure 4,209,047 Fr.; (1949 est.) revenue 4,266,200 Fr., expenditure 4,575,749 Fr. Included since 1924 in the Swiss customs and monetary union. Liechtenstein uses Swiss currency. (Exchange rate beginning Sept. 26, 1949: 1 Swiss Fr.=23.09 U.S. cents.) It was believed that a quarter of the principality's revenue came from sales of postage stamps. The main industries are agriculture (chief products being potatoes, corn, wine and vegetables) and textiles.

Life Insurance: *see* Insurance.

Life Statistics: *see* Birth Statistics; Death Statistics; Infant Mortality; Suicide Statistics.

Lighting: *see* Electrical Industries.

Lilienthal, David Eli (1899–), U.S. government official, was born on July 8 at Morton, Ill., attended DePauw university, Greencastle, Ind., and Harvard university law school, then practised law in Chicago from 1923 to 1931 when he was named to the Wisconsin Public Service commission. In 1933 Pres. F. D. Roosevelt appointed him a director of the Tennessee Valley authority, and in 1941 he became chairman of the board of TVA. In 1946 he was chairman of a committee whose report to the state department formed the basis for U.S. proposals for establishment of atomic energy control through the U.N.

In Oct. 1946, Pres. Harry S. Truman nominated Lilienthal chairman of the U.S. Atomic Energy commission, and after protracted debate in the senate the nomination was confirmed April 9, 1947. Lilienthal again became a contentious figure. In 1949 he was charged with "incredible mismanagement" of the atomic energy program by Sen. B. B. Hickenlooper of Iowa, but the U.S. joint congressional committee on atomic energy threw out the charges after weeks of hearings.

In November Lilienthal submitted his resignation from the AEC, effective Dec. 31, explaining that he was resigning in order to "engage in public discussion and public affairs with a greater latitude," and that he had waited for a lull in the campaign against him to avoid the appearance of quitting under fire.

Limes: *see* Fruit.

Linen and Flax. The traditional linen trade between Northern Ireland and the United States received a noticeable impetus in the last quarter of 1949, because of devaluation of the British pound. Up to September, reports on the linen business were pessimistic. But, by the end of the year, exports of linens from Northern Ireland to the United States totalled 11,868,000 sq.yd. valued at £2,280,126, an increase of 10% over 1948. Prospects for 1950 were considered bright because of a demand for linen dress fabrics, principally those with new wrinkle-resistant finishes. Prices were also attractive, estimated to be from 12% to 15% below what they were prior to the currency devaluation. However, prices were still four times higher than the average before World War II.

Raw material supplies were of major concern. Central European sources were no longer available to western European weavers, and flax growing in western Europe was being encouraged. In Belfast, in October, the government published details of a three-year plan for subsidizing flax growing. Spinners agreed to buy, each three-year period, a minimum of 4,000 tons of deretted flax and 2,000 tons of rescutched tow, the rest to be taken by the government.

Progress was reported in establishing the value of the aeration ret in flax production, and a modification of the preliminary breaking arrangement in the scutching machine which produced an increased yield of flax. Reduction of temperature and humidity in the wet-spinning rooms had also been accomplished through research on spinning. High temperatures and excessive humidity had previously been blamed for poor performance by individual workers and difficulty in securing workers.

A previous attempt, reported in 1948, to utilize the shuttleless loom, had been followed by a preference for newer types of shuttle changing and pirn (bobbin) changing fully automatic looms as being more adaptable to flax. The shuttle changing loom was used for light fabrics such as sheers, cambric and aero fabrics. The pirn changing loom was widely employed for medium and heavyweight fabrics such as huck towels. Old loom buildings were remodelled, effort being concentrated on widening passages to facilitate greater freedom of movement, the use of larger warp beams and the introduction of mechanized equipment for transporting these from the beam storage to the back of the loom. Another improvement was the elimination of overhead motor drive, which resulted in better lighting conditions and greater freedom of movement. It was also discovered in 1949 that previous unsatisfactory attempts to introduce automatic weaving into linen factories resulted not from any fault of the loom mechanism but from the unsatisfactory condition of the warps produced by the old system of preparation. The inelastic nature of flax yarns called for certain modifications in construction and setting.

Belgium, one of the chief sources of flax, showed, in the 1949 exports of linen and flax, the trend toward substitution of flax yarn for linen fabric. Based on reports for 8 months of the year, the average monthly production and export of flax and linen for 1949, compared with the 12-month average for 1948, was as follows:

	Average monthly, metric tons			
	1948		1949	
	Production	Exports	Production	Exports
Flax tow.	—	1,011	—	10,878
Scutched flax.	—	3,226	—	23,492
Flax yarn	620	215	3,951	2,457
Linen fabric	418	165	2,350	1,475

In France, flax production was running well ahead of schedule and was expected to exceed 29,000 tons, compared with 22,000 tons in 1948.

Austria's flax production for 1949, according to unofficial reports, was estimated to be between 850 and 1,100 metric tons of scutched fibre, including tow. Linen yarn output for the first six months of 1949 was estimated at 546 tons and linen cloth at 931,530 metres. In 1948, output was 880 tons and 1,088,565 metres for the same period.

In Canada, all flax production was suspended in 1949 except in Quebec and Ontario. Only 7,500 ac. were planted in 1949, compared with 14,116 in 1948 and an average of 24,548 in 1943–47. The only mill spinning flax fibre used tank-retted flax from Belgium. However, even imports were drastically lower in the first six months of 1949 than in the same period of 1948. Belgium and the United States supplied most of the 1,110 cwt., compared with 8,526 cwt. in 1948.

The political and military situation in China created confusion in the United States linen market in October, and it was predicted that no shipments would be received from either central or south China until the situation resolved itself. The Linen Trade Association of New York, however, filed a protest with the U.S. secretary of state over the seizure of two United States ships by the Chinese nationalist navy on which there was a substantial quantity of linens bound for the U.S. for 1949 Christmas sales.

Like other textile groups, linen merchants were disturbed in 1949 at the rapid advance made by the Japanese in re-enterin world markets. Japan was expected to be shipping large quantities, by 1950, of low count cotton fabrics for table use tha would seriously compete with linen cloths.

No reports were available as to the production of flax or line in the U.S.S.R. (I. L. Bl.)

Lions Clubs, International Association of: *see* Societies and Associations.

Liquors, Alcoholic.

Production of all types of distille spirits in the United States reache 266,542,499 proof gallons in the fiscal year ended June 30, 1949 This figure represented an increase of more than 20,000,000 gal from the previous year's total of 244,127,343. Whisky production, accounting for the bulk of all distilled spirits produced i the U.S., jumped considerably above the total of the 1948 fisca year—149,600,000 proof gallons, as contrasted with 129,600,00 gal. The remainder of distilled spirits manufactured, gin, rum brandy and other spirits, together represented 40% of the tota

Withdrawals of distilled spirits from distilleries and warehouses dropped from 161,700,000 proof gallons in the 1948 fiscal year, to 153,500,000 proof gallons for the year ended Jun 30, 1949—a decrease of about 5%. Bottled output also decline approximately 4%—from 165,900,000 wine gallons in 1948 t 160,900,000 in the 1949 fiscal year.

In June 1949, U.S. whisky inventories stood at about 511,000,000 proof gallons, or well over the 425,000,000 proof gallo average for "normal" years. However, the supply was far fro adequate, for only 23,000,000 gal., or less than 5% of the tota were composed of sufficiently aged whiskies (four years o older), as contrasted with the 1941–42 average of 23% of th annual total.

During 1948–49 there was a resurgence of "moonshining." I the calendar year 1948, 7,552 illegal stills were seized by agent of the alcohol tax unit—an increase of more than 25% fro the previous year's total. The total for the fiscal year endin June 30, 1949 indicated a similarly rising total—8,008 still seized having a daily producing capacity of 224,888 proof gallons, as against 6,757 (with a daily capacity of 173,087 proof gallons) during the fiscal year 1948.

Patterns of distilled-spirits consumption were undergoing gradual process of change in 1949, with a slowly increasing consumer preference for straight and bonded whisky and a consequent decline in the partiality for blends. In the first half o 1948, the total amount of straight whiskies placed into consume channels equalled 4,800,000 wine gallons; in the Jan.–June 1948 period, this figure had jumped to 7,700,000 wine gallons— more than 60% greater than the previous year. Blended whisk totals, on the other hand, declined. From Jan.–June, 1948, th total gallonage of blends made available for consumption wa 53,800,000; the same period in 1949 saw a decrease in output t 51,500,000 gal.

The U.S. import picture, too, was one of transition: the year 1947 and 1948 marked the change from a seller's market, whe

Table I.—*Revenues from Alcoholic Beverages*

Calendar Year	Distilled Spirits	Beer	Wine	Grand total
1941	$ 558,547,795	$348,876,726	$20,008,266	$ 927,432,7
1942	777,793,659	403,436,418	33,943,923	1,215,174,0
1943	906,378,809	515,063,123	32,759,793	1,454,201,7
1944	1,408,368,230	627,458,724	47,625,921	2,083,452,87
1945	1,661,793,763	659,055,927	49,073,828	2,369,923,51
1946	1,972,860,338	642,224,380	75,898,249	2,690,982,9
1947	1,578,195,476	702,059,301	49,905,396	2,330,160,17
1948	1,427,017,216	684,570,490	65,016,303	2,176,604,0
1st 8 months, 1946	1,275,445,601	420,956,201	48,826,334	1,745,228,1
1st 8 months, 1948	841,497,634	461,816,556	39,373,670	1,342,687,8
1st 8 months, 1949	882,283,761	471,709,512	41,241,575	1,395,234,84

Source: Prepared by Licensed Beverage Industries, Inc., research & statistical divisio from data of the alcohol tax unit, Bureau of Internal Revenue, Treasury Department.

virtually all imported items were either in short supply or completely unavailable, to a buyer's market, with stocks readily available and in ample quantity. Total distilled spirits imported for consumption during the calendar year 1948 amounted to 14,359,666 wine gallons, the bulk being Scotch whisky. For the first eight months of 1949, total distilled-spirits imports equalled 3,788,823 wine gallons, with whisky accounting for more than 7,000,000 gal. (A. J. Lr.)

U.S. Revenue and Control.—In spite of a decline of .4 of 1% in the apparent consumption of distilled spirits, measured in wine gallons, for the first ten months of 1949, federal tax collections for this period showed an increase of 2.7%. Total federal collections for the first ten months totalled $1,811,051,000, as against $1,763,350,000 for the similar period of 1948. Taxes on distilled spirits increased $40,000,000; wine $3,000,000 and beer, $4,000,000. Distilled spirits made up about 64% of the total; beer, about 33% and wine, about 3%. The total federal indicated collections on all alcoholic liquors for 1949 were estimated to be $2,300,000,000.

Collections of state taxes on alcoholic beverages were estimated to be about $450,000,000 in 1949. The following states changed their excise tax rates on distilled spirits in 1949: Arkansas, reduced from $2.52 to $2.50 per gallon; District of Columbia, increased from $.50 to $.75 per gallon; Florida, increased from $1.92 to $2.17 per gallon; Georgia, increased from $4 to $5 per gallon, including $1 excise tax and $4 warehouse charge; Kansas, $1 per gallon (no previous rate); Massachusetts, increased from $2 to $2.45 per gallon; Minnesota, increased from $2.50 to $2.75 per gallon; North Dakota, increased from $1.70 to $2.50 per gallon.

The apparent decline in consumption of distilled spirits undoubtedly was caused in great part by the high cost of living, continuance of the federal tax of $9 per proof gallon, and increased illegal manufacture and sale. Repeated but unsuccessful efforts were made by the liquor industry to secure legislation lowering the federal excise tax of $9 a proof gallon to the prewar figure of $6 per proof gallon.

Intensified competition in the liquor field had led in 1948 to passage of mandatory fair trade contract laws in a number of states.

These laws gave the brand owner the right to establish minimum prices below which the retailer was not permitted to sell, and made the filing of such minimum prices with the state-control authority mandatory.

In 1949 the fair-trade laws had rough going. In important states like Illinois, New York and Louisiana the courts held the state law unconstitutional, voluntary fair-trade contracts, however, remained legal; they differed from the mandatory systems in two highly important particulars: filing of minimum prices with a state authority was not compulsory, and the state authority did not take responsibility for punishing violators. A brand owner under the voluntary system might enjoin a retailer from continuing sales below the minimum price named in the contract.

The federal government took a hand in stopping import of alcoholic liquor into Oklahoma by vigorously prosecuting violators and impounding the liquor. In the federal view, Oklahoma continued to be the only dry state, as the provision in the federal constitution prohibiting importation into dry states had been construed to mean only those which were wholly dry.

Table II.—*U.S. Distilled Spirits Statistics for Fiscal Year Ended June 30, 1949*

	Production (tax gals.)	*Withdrawals* (tax gals.)	*Bottled Output* (wine gals.)
Whisky	149,595,239	52,674,964	142,633,709
Gin	3,937,490	3,785,933	11,355,715
Rum	1,998,746	301,079*	389,038*
Brandy	17,457,565	18,766,334†	1,888,404
Neutral Spirits*	93,553,459	78,017,394	—
Cordials and Liqueurs	—	—	4,315,258
Miscellaneous	—	—	349,120
Total	266,542,499	153,545,704	160,931,244

*Beverage only.
†Includes brandy withdrawn for the fortification of wine.
Source: Prepared by Licensed Beverage Industries, Inc., research & statistical division, from data of the alcohol tax unit, Bureau of Internal Revenue, Treasury Department.

"AFTER 69 YEARS!" a cartoon by Loring of the *Providence Evening Bulletin* (R.I.) noting the lifting of the ban on the sale of intoxicating liquors in Kansas, effective June 6, 1949

In New York, the New York authority banned the giving of all advertising novelties by distillers, brewers and distributors to retailers. However, in December this rule was relaxed and permission was given to furnish such novelties or advertising specialties limited in cost to $25 to retailers. The tendency throughout the country was to tighten the rules covering the furnishing of promotional material to retailers.

Important changes were made in the federal rules covering labels. Beginning in July 1949, labels on imported whiskies were required to state the age of the various kinds of product and the percentage of whisky of non-U.S. origin.

Of importance to the brewing industry was the Eberharter act, passed in 1949. This law, among other things, permitted consumption of beer tax free by brewery employees. It made the bottle shop a part of the bonded premises, permitted the manufacture of by-products on such premises, and changed the method of paying tax on malt beverages. Previously tax had been paid on the amount going into the pipe lines. Now the brewery paid only the taxes on the amount of bottled and canned beer removed from the brewery for sale.

A proposed modification of the rule prohibiting aging of whisky in used barrels was the subject of bitter controversy during 1949. After extended hearings, the federal alcohol tax unit ruled that age could be acquired (and stated on the label) by storage in used containers. Later, after a great deal of protest by Kentucky distillers, it issued a compromise ruling that age might be acquired by storage in used barrels if subsequently the product were stored in new cooperage. This was also later withdrawn. (*See* also BREWING AND BEER; INTOXICATION, ALCOHOLIC; WINES.)

FILMS OF 1949.—*Alcohol and the Human Body* (Encyclopædia Britannica Films Inc.). (M. LB.)

Literary Prizes.

The following is a selected list of literary prizes awarded during 1949:

United States.—Abingdon-Cokesbury Award.—$7,500 to Roland H. Bainton for *Here I Stand*, a biography of Martin Luther.

American Academy of Arts and Letters Award of Merit Medal.—Medal and cash prize of $1,000 to Thomas Mann.

American Historical Association Awards: John H. Dunning Prize.—About $100 awarded every two years for the best work on any subject relating to U.S. history, to William E. Livezey for *Mahan on Seapower*. Watumull Foundation Prize.—$500 for the best book on the history of India, divided between Gertrude Emerson Sen for *The Pageant of India's History*, vol. 1, and Holden Furber for *John Company at Work*.

Anisfield-Wolf Awards.—$1,000 each for the best books on race relations, to Alan Paton for *Cry, the Beloved Country* and to J. C. Furnas for *Anatomy of Paradise*.

Atlantic "Firsts".—Prizes for short stories by unestablished writers making their first appearance in the *Atlantic Monthly*. $750 first prize to Gudger Bart Leiper for "The Magnolias"; $250 second prize to Louis Auchincloss for "Maud."

Author Meets the Critics Prizes.—Honorary awards for best novel of the year and best nonfiction work of the year, chosen by majority vote of the working critics and reviewers of the U.S., to Tom Lea for *The Brave Bulls* and to Robert Frost for his *Complete Poems*.

Bancroft Prizes.—"For distinguished writings in American history," $2,000 each to Robert E. Sherwood for *Roosevelt and Hopkins* and to Samuel Eliot Morison for *Rising Sun in the Pacific*.

Bollingen Prize.—$1,000 for the best book of verse by an American author published in 1948, to Ezra Pound for *The Pisan Cantos*.

Bruce Fellowship in Fiction.—$1,800 to Mari Tomasi for *Like Lesser Gods*.

John Burroughs Medal.—For distinguished literature in the field of nature study, to Helen G. and Allan D. Cruickshank for *Flight into Sunshine*.

George Washington Carver Award.—$2,500 given by Doubleday and Co. for a manuscript making "an effective contribution to the Negro's place in American life," to Bucklin Moon for *Without Magnolias*.

Catholic Literary Award.—Honorary award for the most outstanding book published by a member of the Gallery of Living Catholic Authors, to Thomas Merton for *The Seven Storey Mountain*.

Christopher Awards.—For book-length manuscripts written "in accordance with Christian principles and not against them," $15,000 to George Howe for a novel, *Call It Treason;* $10,000 to Mrs. Richard L. Nowinson for a novel, *The Martels;* $5,000 to Charles O'Neal for a novel, *The Three Wishes of Jamie McRuin;* $5,000 to Rosemary Casey for a play, *Mother Hildebrand;* $3,000 to John L. Oberg for a play, *The Night and the Stars;* $2,000 to the Rev. Urban Nagle for a play, *City of Kings*.

Dodd, Mead Intercollegiate Literary Fellowship.—$1,200 to Claude F. Koch for a novel based on his experiences in the marine corps; Red Badge Detective Story Prizes of $1,000 each to Bart Spicer for *The Dark Light* and to Brandon Bird for *Death in Four Colors*.

Friends of American Writers Award.—$1,000 for the best novel by a midwest author, to Michael de Capite for *The Bennett Place*.

Guggenheim Fellowships.—144 fellowships awarded, of which 20 went to writers: Arna Wendell Bontemps, Rackham Holt, Arthur Stanley Link, Jeannette Mirsky, Dora Raymond, Wallace Earle Stegner, Victor Wolfgang von Hagen, Charles Maurice Wiltse, Helene Maxwell Hooker, Bertram D. Wolfe, William Oliver Everson, Eleanor Green, John Latouche, Jean Paul Malaquais, Mary McCarthy, Kenneth Rexroth, Jay Williams, Eudora Welty, Sally Carrighar, John W. Gassner.

Gutenberg Award.—$1,000 cash prize given by the Book Manufacturers' institute for the book that "most progressively influenced American thought in 1948" to Robert E. Sherwood for *Roosevelt and Hopkins*.

Harper Prize Novel.—$10,000 awarded biennially for a work of outstanding merit in fiction, to Max Steele for *Debby*.

O. Henry Memorial Award Prize Stories.—$300 first prize to William Faulkner for "A Courtship"; $200 second prize to Mark Van Doren for "The Watchman"; $100 third prize to Ward Dorrance for "The White Hound."

Houghton Mifflin Literary Fellowship.—$2,400 for a work in progress, to Fred E. Ross.

Jewish Book Council of America Award.—$250 for "the best fiction work of Jewish interest," to Howard Fast for *My Glorious Brothers*.

Limited Editions Club Gold Medal.—For book "most likely to attain the stature of a classic," to Robert Frost for *Complete Poems*.

Lyric Associates, Inc., Award.—$1,000 grant for poetry, to Robert Hillyer.

Mystery Writers of America Award.—Honorary award for the best first crime novel, to Mildred Davis for *The Room Upstairs*.

National Institute of Arts and Letters Grants.—$1,000 each to six writers: Leonie Adams, James Agee, Joseph Campbell, Vincent McHugh, James Stern and Alfred Kazin.

Newberry Fellowships in Midwestern Studies.—Given by the Newberry library for work in history, biography, literary criticism, contemporary social or political scene, fiction or poetry, to Vincent Starrett for an autobiography; to Lewis Atherton for the history of a small town in the midwest.

New York Drama Critics' Circle Award.—Given for best play produced in New York city, to Arthur Miller for *Death of a Salesman;* for best foreign play to *The Madwoman of Chaillot*, by Jean Giraudoux; for best musical, to Richard Rodgers and Oscar Hammerstein II for *South Pacific*.

Partisan Review Award.—$1,000 for "a significant contribution to literature," to George Orwell, author of *Animal Farm, Nineteen Eighty-Four* and other works.

Eugene P. Saxton Memorial Trust.—Literary fellowships for work in progress awarded by Harper and Brothers, to William Roy Shelton, Rachel L. Carson and Gudger Bart Leiper.

Shelley Memorial Award.—Awarded by the Poetry Society of America for outstanding poetry to Louis Kent.

Constance Lindsay Skinner Award.—Plaque presented by the Women's National Book association for outstanding accomplishment by a woman in the book world, to Lucile Pannell.

Southwestern Fellowship.—$2,000 given by Whittlesey House for the best in fiction or nonfiction stemming from the southwest, to Herbert Eugene Bolton for *Coronado: Knight of Pueblos and Plains*.

Special Libraries Association Award.—To Edwin T. Coman for *Sources of Business Information*.

Stanford University Writing Fellowships.—$2,000 each to Marlow Dawson, Lee Florian Gerlach, Betty Sue Gottfried, Susan E. Kuehn, Helen A. Pinkerton, Clay Putnam.

United Services Fellowships.—Two fiction fellowships of $1,000 each given by the Thomas Y. Crowell Co. for literary talent among those who served in the armed forces, to R. W. Daly for a manuscript tentatively titled *The Monitor and the Merrimac* and to Wyatt Blassingame for a novel about Stephen Crane.

Westminster Press Fiction Award.—$7,500 to Dorothy Clarke Wilson for *Prince of Egypt*.

Wendell Willkie Memorial Award.—For "best book on international relations" to John King Fairbank for *The United States and China*.

Zondervan Fiction Contest.—$10,000 to Guy Howard for *Give Me Thy Vineyard*.

U.S. Children's Books.—Caldecott Medal.—For most distinguished American picture book for children, to Elmer and Berta Hader for *The Big Snow*.

Child Study Award.—Honorary award of Child Study Association of America "for a book for young people which faces real problems in their world" to Pearl S. Buck for *The Big Wave*.

Julia Ellsworth Ford Foundation Award.—$1,250 given by the Foundation and sponsored by Julian Messner, Inc., for a distinguished contribution to current literature for children, to Marion Garthwaite for *Tomas and the Red Headed Angel*.

Herald Tribune (New York) Spring Book Festival Awards.—Three prizes of $200 each: for the best picture book for younger children, to Alvin Tresselt for *Bonnie Bess, The Weathervane Horse;* for the best book for children under 12, to Stephen Fennimore for *Bush Holiday;* for the best book for older boys and girls, to Louise Dickinson Rich for *Start of the Trail*.

Junior Book Awards.—Presented by the Boys' Clubs of America to authors of books which were favourites of boys in 58 Boys' clubs of the United States. Medals to M. I. Ross for *Green Treasure;* to John R. Tunis for *Highpockets;* to Carolyn Treffinger for *Li Lun, Lad of Courage;* to Marguerite Henry for *Misty of Chincoteague;* to Henry V. Larom for *Mountain Pony and the Pinto Colt;* to Charles S. Strong for *Ranger, Sea Dog of the Royal Mounted*. Certificates to Martin Weldon for *Babe Ruth;* to Garth Garreau for *Bat Boy of the Giants;* to May McNeer for *The Golden Flash;* to Norton Hughes Jonathan for *Guide Book for the Young Man About Town;* to Genevieve Torrey Eames for *A Horse to Remember;* to Irving Crump for *Our Oil Hunters;* to Jay Williams for *The Roman Moon Mystery;* to Louis C. Jones for *Spooks of the Valley;* to Mabel Ansley Murphy for *When America Was Young*.

John Newbery Medal.—For the most distinguished contribution to literature for American children, to Marguerite Henry for *King of the Wind*.

Young Readers' Choice Award.—Given by the Pacific Northwest Library association to the author of a book popular with boys and girls from the fourth to the eighth grades, to Shannon Garst for *Cowboy Boots*.

Canada.—Governor-General's Awards.—Silver medals awarded to Hugh MacLennan for *The Precipice* (fiction); to A. M. Klein for *The Rocking Chair and Other Poems* (poetry); to Col. C. P. Stacey for *The Canadian Army 1939–1945* (academic nonfiction); to Thomas Raddall for *Halifax, Warden of the North* (creative nonfiction); special citation to Roderick L. Haig-Brown for *Saltwater Summer* (juvenile). Hebert Medal.—For the best Canadian book for children, to B. Mabel Dunham for *Kristli's Trees*. Lorne Pierce Medal.—awarded by the Royal Society of Canada for achievement of special significance and conspicuous merit in imaginative or critical literature, to John Murray Gibbon. Leacock Memorial Medal for Humour.—To Angeline Hango for *Truthfully Yours*. Ryerson Press Fiction Award.—$1,000 to Philip Child for *Mr. Ames Against Time*. Tyrrell Medal.—Awarded by the Royal Society of Canada for research in Canadian history, to Reginald G. Trotter. (R. E. Bs.)

Great Britain.—The James Tait Black Memorial Prizes, worth about £250 each, were awarded in 1949 to Graham Greene for *The Heart of the Matter* (fiction award) and to Percy Scholes for *The Great Dr. Burney* (biography). Two awards were made from the William Heinemann Foundation for Literature, administered by the Royal Society of Literature (value up to £200). Both were for poetry: the recipients were John Betjeman for his *Selected Poems* and Frances Cornford for her *Travelling Home*. The Carnegie Medal, awarded by the Library association to the British writer of an outstanding book for boys and girls, went to Richard Armstrong for *Sea Change*. The Rose Mary Crawshay Prize, offered by the British Academy for a critical or historical work dealing with English literature by a woman of any nationality, was awarded to Rosemond Tuve for an essay on *Elizabethan and* *etaphysical Imagery*. The JOHN LLEWELLYN RHYS MEMORIAL PRIZE, ith a value of £50, was awarded to Emma Smith for her first book *aidens' Trip*. The TOM-GALLON AWARD, the object of which was to ee writers for creative work by providing an income for two years, was ven to Olivia Manning for her short story, "The Children," published her volume of stories entitled *Growing Up*.

In 1946 the Rockefeller foundation in New York made a grant of 50,000 for ATLANTIC AWARDS IN LITERATURE, to be given to young ritish writers of promise whose careers had been interrupted by the war. 1949 awards were made to Norah Kelsall Cruickshank, Joseph Jacobs, avid Paul, John Singer and Peter Norman Ross Yates. These would robably be the last awards to be made since the fund was exhausted.

The SOMERSET MAUGHAM AWARD, an annual award of about £250 be used for foreign travel by British entrants under the age of 30, ent to Hamish Henderson for his book of verse, *Elegies for the Dead Cyrenaica*. The SUNDAY TIMES BOOK PRIZE, first awarded in 1947 nd worth £1,000, was presented in 1949 to Winston Churchill for his ar memoirs. In addition two special subsidiary prizes, each consisting a gold medal and the sum of £100, were awarded to F. Spencer Chapan for *The Jungle is Neutral* and to Alan Paton for *Cry, the Beloved ountry*. The WILLIAM FOYLE POETRY PRIZE was founded in 1949 and e first award, the sum of £250, went to Edwin Muir for his volume *he Labyrinth*. (E. SE.)

France. GONCOURT PRIZE to Robert Merle for *Week-end à Zuydcoote*. HÉOPHRASTE RENAUDOT prize to Louis Guilloux for *Jeu de patience*. ÉMINA PRIZE to Maria Le Hardouin for *La Dame de coeur*. INTERALLIÉ RIZE to Gilbert Sigaux for *Les Chiens enragés*. DENYSE CLAIROUIN RIZE to Dominique Aury for the translation of Evelyn Waugh's *The oved One* and James Hogg's *Confessions of a Justified Sinner*. SAINTE-EUVE PRIZE: (novel) to Lise Deharme for *La Porte d'à côté;* (essay) to laude Mauriac for his book on the surrealist leader André Breton. YNDICAT DES CRITIQUES LITTÉRAIRES PRIZE to Antoine Adam for his *istoire de la littérature française au XVIIe siècle*. The CITY OF PARIS RIZE, after having been refused by the surrealist leader, André Breton, as awarded to Philippe Chabaneix, author of *Tendre Amie*. (*See* also OBEL PRIZES.) (M. JOL.)

iterature: *see* AMERICAN LITERATURE; BOOK PUBLISHING; ANADIAN LITERATURE; ENGLISH LITERATURE; FRENCH LIT- RATURE; GERMAN LITERATURE; ITALIAN LITERATURE; LITER- RY PRIZES; NOBEL PRIZES; PULITZER PRIZES; RUSSIAN LIT- RATURE; SPANISH-AMERICAN LITERATURE; SPANISH LITERA- URE.

ithuania. From Feb. 16, 1918, to Aug. 3, 1940, when it was annexed by the U.S.S.R., Lithuania was an indeendent Baltic republic. The British, U.S. and many other govrnments, however, had not granted by 1949 *de jure* recognition this annexation. For more than two decades Lithuania was ounded by Latvia, Poland and Germany; in 1945 the U.S.S.R. ecame its eastern and western neighbour through the Russian nclave of Königsberg (later Kaliningrad). Area: (before arch 21, 1939, including Klaipeda [Memel]) 21,330 sq.mi.; after Oct. 10, 1939, excluding Klaipeda but including Wilno Vilnius]) 24,092 sq.mi.; (from 1945, including both Klaipeda nd Vilnius) 25,173 sq.mi. Pop.: (Jan. 1939 est.) 2,575,000; Jan. 1940 est.) 2,879,000; (Jan. 1946 est.) 2,353,000. If there ad been no movement of population the last figures should have een 3,032,000. The reduction is explained by the evacuation of 4,000 Germans from Lithuania proper in 1939–40 and of 59,00 Germans from Klaipeda territory in 1945, by the first soviet eportation in 1940–41 of 35,000 people, the murder of about 08,000 Jews by the Germans, the fact that about 80,000 Lithunians fled to Germany when the soviet armies returned, by a econd wave of soviet deportations in 1944–45 (about 85,000) nd by the evacuation to Poland of about 178,000 Poles. Chief owns (Jan. 1940 est.): Vilnius (capital, pop., 209,400); Kaunas 154,100); Klaipeda (38,900). Chairman of the presidium of he supreme soviet of the Lithuanian S.S.R., Justas I. Paleckis.

History.—As in the two other Baltic republics 1949 saw a ew wave of mass deportations, the ruthless enforcement of ollectivization and the final liquidation of the Roman Catholic ierarchy. During the last four months of 1948 and the first alf of 1949 a mass deportation was carried out as part of a eneral plan extended also to Estonia and Latvia (*qq.v.*). Acording to a memorandum submitted on Nov. 2, 1949, to the nited Nations by Povilas Žadeikis, on behalf of the Lithuanian Liberation committee, about 120,000 Lithuanians were deported to the interior of the U.S.S.R.

Collectivization made great progress during the year. At the end of 1947 there had been only 20 *kolkhozes* (collective farms) in Lithuania: in a letter from Lithuanian women published in *Izvestia* on July 6, 1949, the number of *kolkhozes* was given as more than 4,000. On Nov. 3, M. A. Gedvilas reported in the same paper that there were 5,454 *kolkhozes*.

According to a broadcast from the Vatican on July 6, Mgr. Kazys Poltorakas, bishop of Panevežys and suffragan of Kaunas, was ordered to suspend his activities; his whereabouts was not known. He was the last Roman Catholic bishop tolerated by the Communist authorities. Mgr. V. Boriševicius, bishop of Telšai, and Mgr. S. Reinis, vicar general of Vilnius, were arrested during the year. Of more than 1,300 clergy left free until 1948, about half were deported during 1949.

Education.—In 1949 there were 2,777 elementary, 660 technical and 170 secondary schools with a total of 425,000 pupils. Students enrolled at the two universities of Vilnius and Kaunas numbered about 5,000. In 1938, without the Vilnius area, there were 2,601 elementary schools with 307,173 pupils, and 273 secondary and technical schools with 31,647 pupils.

BIBLIOGRAPHY.—*Lithuanian Bulletin*, published by the Lithuanian American council; *Newsletter from Behind the Iron Curtain*, compiled by the *Baltic Review*, Stockholm. (K. SM.)

Li Tsung-jen (1890–), acting president of Nationalist China, was born in Kweilin, Kwangsi. In 1928, commander of the 4th army group, he completed the northern expedition against rebellious commanders that, at least theoretically, brought all China under Nanking control. Li was then appointed a state councillor in the National government. In 1929, however, he staged a revolt in Hankow, set up a virtually independent regime in southwest China. In 1932 he was officially pardoned, and appointed to the Kuomintang central supervisory committee. After the formal outbreak of war between China and Japan in 1937, Chiang Kai-shek sent Li with his army to the northern front, where it performed outstandingly. On Jan. 21, 1949, Chiang "retired" as president of the Nationalist government of China, and Li, vice-president, became his successor. Presumably Chiang retired so that Li and others in the Nationalist government could attempt to effect peace with the Chinese Communists. Three months of peace talks, however, were ineffectual, and the Communists eventually resumed their onslaughts and conquered virtually all of China. Li, late in 1949, flew to the U.S. for medical treatment, but pledged to return to China to continue the fight against what he called "Communist forces of aggression." (*See* also CHINA.)

Liver Disorders: *see* ALIMENTARY SYSTEM, DISORDERS OF.

Livestock. Livestock on U.S. farms in 1949 reversed the trend of former years and, with the possible exception of sheep and the certain exception of horses and mules, began again to increase in numbers. The number of stock sheep on farms Jan. 1, 1949, was the lowest on record, apparently because of competition with more profitable cattle production and the high cost and scarcity of labour. Beef cattle ended the declining phase of their cycle in spite of the fact that markets were bidding strongly for high-grade slaughter cattle. Dairy herds, because of the easy feed situation, were fed more heavily and were less carefully culled. More brood sows were kept because of the large corn crop of 1948. More chickens and turkeys were produced because of the favourable demand for eggs and poultry and the easier feed situation. Horses and mules continued to decline because of mechanical replacement.

Livestock prices during 1949 followed divergent trends. High-grade beef was higher in price, setting new records. Lower quality butcher stuff and feeder and stocker cattle declined in price.

RANCHER herding the remainder of his livestock toward shelter and feed on a ranch near Cheyenne, Wyo., during the severe blizzards that swept western and mountain states of the U.S. early in 1949

The amount of beef produced in 1949 was about 4% more than in 1948, primarily because of heavier slaughter weights. The number going on feed for marketing in 1950 was high.

Stimulated by the record corn crop of 1948 and the very large one of 1949, the pig crops of 1949 were larger with the promise of a still larger one in early 1950. The spring crop of 1949 was 59,039,000 head, compared with 51,266,000 head a year earlier, and a preliminary estimate of 62,500,000 head in the spring of 1950. The fall pig crop of 1949 was estimated at 37,262,000 head, compared with 33,921,000 head a year earlier. Thus the total for 1949 was 96,301,000 head, against 85,187,000 head in 1948. In general, the hog crop of the spring of 1949 was marketed at somewhat lighter weights than usual, thus producing less total weight, particularly less lard.

Production of poultry and poultry products on U.S. farms in 1949 was large; 749,000,000 chickens were raised, exclusive of commercial broilers, or 18% more than in 1948. Layers on farms at the year's end were indicated as more numerous than the 413,000,000 head as of Jan. 1, 1949.

Livestock on U.S. Farms

(In thousands of head)

	Jan. 1, 1949	Jan. 1, 1948	Average 1938-47
Horses	5,921	6,589	9,495
Mules	2,353	2,541	3,620
Cattle (including calves)	78,495	78,126	76,312
Milk cows	24,450	25,039	26,118
Sheep	31,963	34,827	49,736
Hogs	57,139	55,028	60,584
Chickens	448,838	461,550	479,166
Turkeys	5,493	4,450	7,221

World horse numbers in 1949 were estimated at 76,000,000 head, a slight increase compared with 1948, but 21% below the prewar numbers. Increases were mostly in countries recovering from extensive war damage.

World cattle numbers at the beginning of 1949 were estimated at 761,000,000 head, a record, and about 10,000,000 head more than a year earlier, and 4% above the prewar estimate. Not only further recovery from war damage but improved feed prospects favoured building herds to higher levels. Significant increases occurred in all continents except North America and Africa. Practically all European countries increased; numbers in Argentina declined.

World sheep numbers, estimated at 720,000,000 head early in 1949, increased for the second consecutive year, but were nevertheless 20,000,000 head, or 3%, below the prewar average. Both improved grazing conditions and higher prices encouraged the expansion. The decreases in the U.S., Argentina and China were more than offset by increases in Europe, Australia and the U.S.S.R. The large wool stock pile which existed in the early postwar period dwindled rapidly, and the better-grade wools were much in demand at the auctions of the year, some at record prices.

World hog production expanded in 1948, resulting in about 261,000,000 head at the beginning of 1949, or 6% more than a year earlier. Significant increases occurred in all continents, with the devastated areas of Europe and the U.S.S.R. showing the ajor increases. (*See* also AGRICULTURE; MEAT.)

FILMS OF 1949.—*Hill Sheep Farm* (British Information Services). (J. K. R.)

ivestock Shows: *see* SHOWS, ANIMAL.

obotomy: *see* PSYCHIATRY.

ocal Government: *see* MUNICIPAL GOVERNMENT.

ondon.

On April 7, 1949, the triennial municipal elections took place both for the London County council and e metropolitan boroughs. In April in the elections to the Lon-on County council, by a remarkable turnover of votes from abour to the Conservative party, the two parties drew even 64:64) and the solitary Liberal elected, Sir Percy Harris, held e casting vote. The Labour party however claimed the right appoint the chairman and also to fill 6 of the 11 aldermanic acancies. In the borough elections on May 12 there was a milar trend of votes resulting in a gain of six boroughs—olborn, Paddington, St. Pancras, Lewisham, Stoke Newington d Wandsworth—all predominantly working-class districts, to e Conservative interest.

The year was for London the first after World War II of a turn to something like normal life and routine. Restoration d construction were proceeding steadily. Scaffolding on many Sir Christopher Wren's churches indicated repairs in prog-ess: the restoration of St. Clement Danes began; and the re-ored Middle Temple hall and the reconstructed north aisle of l Hallows, Barking-by-the-Tower (Toc H headquarters), were pened in July by the queen. In October the prime minister id the foundation stone of a new permanent concert hall, to rm part of the 1951 Festival of Britain exhibition buildings, the south bank of the river close to the railway between aterloo bridge and County hall.

The switching on of electric publicity signs on April 2 brought rowds to Piccadilly Circus, Trafalgar square and the West End entres to see the return of London's former nighttime gaiety; d in May, partly for the indulgence of foreign summer visi-rs, a clause was added to the Licensing bill permitting properly censed restaurants and night clubs in London to conduct busi-ess till 2 A.M.

Throughout the port of London there were steady repairs d reconstruction to wharves, transit sheds, quays, lock gates d docking machinery. The tonnage handled in the port con-nued to rise and at 45,939,095 tons at the close of March 1949 as 4,500,000 tons above the annual total at the same date in 948 and 74% of the 1939 figure.

At the British museum in September the Elgin marbles were estored to public view after ten years' seclusion. At St. Paul's athedral a design was being considered for replacing the 19th entury reredos by a baldachino of baroque style in keeping with ren's known ideas. The apsidal chapel was to become a me-orial chapel to members of the U.S. forces who lost their ves while based on Britain during World War II, the expenses be borne by British contributions. A marble roll of honour as being prepared in the United States.

Nearly all the statues removed from open-air sites during the ar returned to their positions. That of Sir Robert Peel for-erly at the junction of Newgate street and Cheapside was still osent; the Royal Marines' memorial was re-erected in the Iall close to its former site now occupied by the Admiralty tadel; the Royal Naval division memorial was to go to Green-ich and the statue of General Gordon from Trafalgar square, fter much discussion, was to stand in Whitehall place in front the new government building in course of erection.

LONDONERS watching the lights go up again, April 2, 1949, after ten years of darkened streets. The child in the picture had her first sight of street illumination, lighted shop windows and the bright neon signs of Piccadilly Circus

In addition to further discoveries relating to Roman and me-aeval London in the bombed Cripplegate area, the Mediaeval d Roman London Excavation council had to deal in circumstances of emergency with finds, principally Roman, brought to light by contractors' mechanical excavators clearing bombed sites for reconstruction in Old Jewry, Eastcheap, Wallbrook, Bankside and elsewhere in and around the city. The Wallbrook (now far below street level), which formed at Dowgate the Roman port of London, yielded remains of Roman quays, pavements, articles of use including a Roman sandal and a fragment of a presumably Roman stone bollard. (D. NN.)

Lords, House of: *see* PARLIAMENT, HOUSES OF.

Los Angeles.

Los Angeles, fifth largest city in the United States according to the 1940 census (pop. 1,504,277) and largest in area (452.2 sq.mi.), had a population estimated by the county planning commission at 2,051,348 as of Oct. 1, 1949; the estimate for the county was 4,227,413 and for the metropolitan area 4,275,000. Mayor Fletcher Bowron was re-elected to a third term in 1949.

The industrial development of Los Angeles continued to keep pace in 1949 with its population growth. In the first ten months of 1949, the county received 153 new manufacturing establishments, valued at $42,119,000. In the same period, 293 existing firms were expanded, for an additional investment of $41,227,500. The total of $83,346,500 for a ten-month industrial development was an increase of 31% over the $63,458,500 invested during the corresponding period of the year before.

Construction activity in Los Angeles county during the first ten months of 1949 lagged far behind the record set for the same period of 1948, but was well ahead of the new building figures for 1947. The value of permits issued in 45 municipalities of the county, including the City of Los Angeles and the unincorporated area, was $600,314,859. This may be compared with $738,280,213 at the same time a year before, and with $552,708,417 for the ten-month period in 1947. The bulk of the 129,308 new construction permits issued from Jan. through Oct. 1949 was for residential units.

Los Angeles county again in 1948 had the highest income for agricultural products ($227,544,690) of any U.S. county. It was a gain from $222,882,990 in 1947, and $214,800,000 in 1946.

Los Angeles county in Sept. 1949 had 1,612,000 persons gainfully employed, according to the California state department of employment. That was a gain of .6% over July.

The total tax rate for the 1949–50 fiscal year was set at $6.1711 per $100 of assessed valuation, with assessment based on approximately 50% of real estate market value. The $6.1711 figure included $1.6000 for the county, $1.6332 for the city, $2.4067 for schools and other amounts for special districts. Assessed valuations, higher because of greater value of property as well as many improvements, were $2,428,594,985 for the city and $4,749,795,235 for the county. The 1949–50 city budget was $258,578,249, including $92,029,672 general; $12,073,921 for pensions; $9,843,288 for libraries, parks and recreation; $159,436,306 for the harbour, water and power department and airport. Affecting this total was a deductible adjustment of $14,804,938. (E. V. G.)

Louisiana. One of the west south central states of the United States, admitted to the union in 1812 as the 18th state, Louisiana is popularly known as the "Pelican state," "Creole state" or "Bayou state." Area 48,523 sq.mi., of which 45,177 sq.mi. are land. Pop. (1940) 2,363,880, of which 1,383,441, or 58.5%, were rural and 980,439, or 41.5%, urban; 64% native whites, 34.3% Negroes and 1.7% foreign-born. On July 1, 1949, the bureau of the census estimated the state's population at 2,630,000. Capital, Baton Rouge (34,719). Other important cities: New Orleans (494,537), Shreveport (98,167), Monroe (28,309), Alexandria (27,066), Lake Charles (21,207), Lafayette (19,210).

History.—The legislature did not meet in 1949, and there were no important activities in state politics. Late in the year political interest was focused on the forthcoming New Orleans mayoralty election, the opposition forces seeking a candidate to run against Mayor De Lesseps S. Morrison, who was seeking re-election.

Other important events in Louisiana in 1949 were: Payment of about $58,000,000 as a bonus to about 254,000 veterans of World War II, out of a bond issue of $60,000,000 provided by the 1948 legislature, to be liquidated from proceeds of a new tax upon beer; the controversy with the United States government over ownership and control of the oil-producing tidelands along the southern coast of the state; expansion of state charity hospital facilities by constructing additions to some of the existing state hospitals and negotiating contracts with private hospitals for treatment of charity patients in sections of the state remote from existing state charity hospitals; beginning construction of a new state mental hospital to relieve overcrowded conditions in the two old state hospitals for the insane; enlarged facilities for the care of tuberculosis patients, by constructing special units for such patients at some of the charity hospitals; completion of a $6,000,000 building program at the Louisiana State university, mainly for additional dormitory facilities; expansion of existing industrial plants and the construction of several new plants, the most important of which was a $42,000,000 plant at Lake Charles for the production of lubricating oils; increased expenditures on public highways for new construction and improvement of existing highways and the gravelling of many farm-to-market roads; completion by the Louisiana Law institute of the project authorized by the 1942 legislature for the revision of the state statutes, so as to eliminate obsolete laws and to combine into single statutes all laws dealing with the same subject-matter; expansion of the rural electrification program and of existing airport facilities so as to meet the increased demand for air-transport service; opening of several new parish branches of the State library, to serve the rural areas of the state; enlargement of the state program of old-age pensions and other aid to the needy poor and underprivileged citizens; and co-operation with the southern regional plan of providing special types of professional and vocational education for Louisiana residents in other states when such facilities are not available at existing state colleges and universities.

State officers in 1949 were: Earl K. Long, governor; William J. Dodd, lieutenant governor; Wade O. Martin, Jr., secretary of state; A. P. Tugwell, treasurer; L. B. Baynard, auditor; Bolivar E. Kemp, Jr., attorney general; Shelby M. Jackson, superintendent of education; Lucile May Grace, register of land office; W. E. Anderson, commissioner of agriculture and immigration.

Education.—In 1949 the 796 public schools for whites enrolled 224,679 elementary and 54,929 high school pupils and employed 11,132 teachers; the 1,402 public schools for Negroes enrolled 158,839 elementary and 16,938 high school pupils and employed 5,094 teachers. The 191 private schools for whites enrolled 51,857 elementary and 9,669 high school pupils and employed 1,934 teachers; the 97 private schools for Negroes enrolled 12,939 elementary and 1,696 high school pupils and employed 405 teachers. The state maintained 11 public trade schools and several private trade schools were operated for training veterans of World War II.

Total state expenditures for the 1948–49 fiscal year were $83,250,477 for public education at all levels. Much of the increase over the previous year resulted from a higher salary scale for teachers and expansion of the free school lunch program.

Social Insurance and Assistance, Public Welfare and Related Programs.—Readjustment allowances paid to Louisiana veterans of World War II dropped from $9,500,000 in 1948 to about $5,000,000 in 1949; total payments to Louisiana veterans to the end of 1949 were $73,000,000. Civilian unemployment compensation rose from $6,000,000 in 1948 to $18,000,000 in 1949. Total payments made by the Louisiana division of unemployment security, for all purposes, increased from $15,500,000 in 1948 to $23,000,000 in 1949.

Louisiana expended $51,000,000 in 1948 and $95,000,000 in 1949 on public welfare, the great increase being largely caused by higher old-age pensions and liberalized eligibility rules for applicants for public assistance.

Table I.—*Louisiana Public Welfare Programs, 1949*

Type of assistance	Average number on rolls	Cost for year
Old age pensions	118,000	$66,000,000
Needy blind	2,200	850,000
Dependent children	90,000	17,000,000
Foster children	900	460,000
Special cases	28,000	11,000,000
Totals	239,100	$95,310,000

In 1949 the state maintained seven charity hospitals; two hospitals for the insane; two tuberculosis sanitoriums; one state school for the white blind and deaf and one for Negroes; a training school for the feeble-minded; a special training school for spastic children. Free ambulance service and free travelling dental clinics for the poor were expanded during the year.

The state maintained two prison farms for its 2,500 adult offenders; separate training institutes for about 200 delinquent white boys and girls and a training institute for 100 delinquent Negro boys.

State expenditures for maintenance and expansion and modernization of its charitable and correctional institutions were about $20,000,000 for the 1948–49 fiscal year.

Communications.—In 1949 Louisiana had 18,200 mi. of public highways, 14,800 mi. of which were state-maintained, 10,000 mi. being gravelled and 4,800 mi. paved. State expenditures for highway maintenance and new construction were $38,500,000 in 1949, compared with $33,000,000 in 1948. In 1949 there were 429 mi. of highways blacktopped at a cost of $10,500,000, and many farm-to-market roads were gravelled. There vere 4,400 mi. of railways and 4,800 mi. of navigable waterways.

There were about 100 land airports and 10 seaplane bases in operaion in 1949. There were about 455,000 telephones in service at the close f the year.

Table II.—*Commerce of Louisiana Ports in 1948*

(In tons)

Ports	Foreign	Coastwise and Internal	Total
ew Orleans	8,384,305	20,341,969	28,726,274
aton Rouge	1,006,986	10,324,069	11,331,055
ake Charles	326,551	12,554,417	12,880,968
Totals	9,717,842	43,220,455	52,938,297

Banking and Finance.—Louisiana had 33 national banks in 1949, with otal deposits of $1,120,000,000 and resources of $1,180,000,000; and 26 state banks, with total deposits of $500,000,000 and resources of 536,000,000. There were 62 savings and loan associations, with total esources of about $200,000,000. State budget for 1948–49 fiscal year: eceipts $305,000,000; expenditures $285,000,000. The state bonded lebt was $218,000,000 on July 1, 1949.

Agriculture.—The total value of agricultural and truck crops in 1949 vas $272,000,000, compared with $303,000,000 in 1948; total acreage arvested was 3,600,000, about the same as in 1948. The total cash ncome from crops, livestock and poultry and their products was $400,-00,000, compared with $445,000,000 in 1948; from government paynents $10,300,000, compared with $8,765,000 in 1948.

Table III.—*Leading Agricultural Products of Louisiana*

Crop	1949	1948	Average 1938-47
otton (bales)	650,000	756,000	528,000
orn (bu.)	18,446,000	17,057,000	20,296,000
ice (bu.)	24,559,000	24,924,000	21,542,000
ugar cane (tons)	6,232,000	5,722,000	5,063,000
weet potatoes (bu.)	8,330,000	7,840,000	8,616,000
ish potatoes (bu.)	1,239,000	1,416,000	2,580,000
ats (bu.)	2,929,000	3,584,000	2,919,000
lay (tons).	446,000	369,000	402,000
ecans (bu.).	13,640,000	19,000,000	8,365,000
eaches (bu.)	265,000	330,000	296,000
ears (bu.)	198,000	240,000	200,000
itrus fruits (boxes)	310,000	300,000	304,000
ruck crops (value)	$10,683,000	$13,983,000	—

Manufacturing.—About 2,400 industrial establishments, employing 150,-00 workers and paying $320,000,000 in wages and salaries, produced inished products worth $1,250,000,000 in 1949, compared with $1,200,-00,000 in 1948. Under the ten-year state tax exemption on capital nvestments in industry, large additions were made to existing plants and everal new plants were completed in 1949, the largest being the $42,-00,000 lubricating oil refinery at Lake Charles.

Forest Products, Furs, Fisheries.—Louisiana forests produced 1,272,702,-51 bd.ft. of lumber and 936,016 cords of pulpwood in fiscal year 1948–9, compared with 1,269,853,242 bd.ft. and 791,745 cords in fiscal year 947–48.

The 1948–49 trapping season in Louisiana yielded only about 3,500,-00 pelts valued at about $4,650,000, compared with 6,144,060 pelts alued at $9,248,870 for the 1947–48 season.

The total catch of Louisiana commercial fisheries was valued at bout $7,000,000 in 1949, about the same as for 1948.

Mineral Production.—Increased demand pushed production of most ouisiana minerals beyond previous levels in 1949.

Table IV.—*Principal Mineral Products of Louisiana*

Mineral	1949	1948
etroleum (bbl.)	191,000,000	174,000,000
latural gas (M. cu. ft.)	700,000,000	686,000,000
latural gasoline (bbl.)	6,000,000	4,230,000
ulphur (tons)	990,000	950,000
alt (tons)	980,000	960,000
hell and gravel (tons)	7,100,000	6,000,000
and (tons)	2,260,000	1,750,000
tone (tons)	290,000	520,000

The total value of mineral production in 1949 was estimated at about 375,000,000, compared with $350,000,000 in 1948. Many new oil nd gas wells were drilled in 1949. (W. Pr.)

Lumber.

In the year 1949, substantially the same species occupied the leading positions in lumber producion in the United States as in recent years, with southern pine, Douglas fir and ponderosa pine comprising about 60% of the otal. The last two are produced only in the west. Other leadng species were oak, white pine, hemlock, spruce, red and black um, yellow poplar and hard maple. A significant feature of umber production during the year was the advance in the tilization of species formerly little used or neglected. Among hese were the true firs, such as the white and red firs of the vest, western larch and lodgepole pine of the northern Rocky nountains, aspen of the lake states and cottonwood, pecan ickory, tupelo gum and black gum of the south.

The usual active spring building boom did not occur as expected. Although the serious housing shortage continued, many buyers refused to pay the prices at which houses were offered. The failure on the part of builders to buy for the usual spring building activity resulted in the slowing of lumber production and particularly the stoppage of marginal mills in the south. This situation continued until about Aug. 1 when the demand picked up strongly, with the result that prices advanced and a large number of mills were reopened.

Lumber production in 1949 was not as large as the 36,000,000,000 bd.ft. produced in 1948 but was estimated at about 31,000,000,000 bd.ft., divided into 25,500,000,000 bd.ft. of softwoods, composed largely of the three species first mentioned above, and 5,500,000,000 bd.ft. of hardwoods, principally oak, red gum, yellow poplar and maple.

Purchases by the Economic Cooperation administration to assist in the rehabilitation of western Europe actively stimulated exports in lumber. However, the devaluation of the British pound on Sept. 18 adversely affected the export of lumber and other forest products from the United States during the fall months.

In the leading lumber-producing section of the country, the south, production fell off about 10% to 15% for the year. Of the 23,000 mills in the 12 southern states, about 98% annually cut less than 5,000,000 bd.ft. each. The small mills accounted for about three-fourths of the entire 1949 southern pine production.

There was also a drop in the production of west coast woods although prices in that section did not fall as low relatively as they did in the south, in the lake states and in the northeast. The leading lumber-producing states of the country, in order of production, continued to be Oregon, Washington and California, followed by Alabama, Georgia, Mississippi, North Carolina and Arkansas.

An important development in 1949 was the continued interest in and adoption of labour-saving machinery. Substantial wage increases and other manufacturing costs led to the increased use of mechanical power saws for felling and bucking saw logs, as well as loading devices, mechanical log barkers, mechanical tree planters, track-type log trailers and improved skidding devices. At the mills, lift trucks and straddle buggies, mechanical lumber sorters, improved feed works and automatic lumber pilers and unpilers were installed to counteract the steadily rising operating costs.

The lumber industries' Tree Farm movement continued to expand under the leadership of the American Forest Products institute and operated in 24 states embracing about 2,000 certified tree farms with a total of more than 18,000,000 ac. In 10 of the southern states nearly 12,000,000 ac. of forest lands had been dedicated to forest management policies to maintain continuous crops of timber for the future.

About 70% to 80% of the entire lumber production was from regrowth forests. The acquisition of large timber properties by many of the lumber and pulp and paper companies continued in order to protect the heavy capital investments in plant installations and assure raw material for the future. Stumpage prices for standing timber continued very high and did not recede as much as lumber and log prices during the year. This was notably true for veneer logs, tight cooperage stock and material for poles, piling and crossties, especially in the south.

The lumber industry was also distinguished by greater integration and diversified utilization of the products. For example in the northwest much greater production from timber areas was secured from relogging, prelogging and salvage logging operations. As much as 25% more than normal production was secured from many of these areas. (N. C. B.)

British Commonwealth and Europe.—In the early part of the year the British board of trade published the report of a committee set up under the chairmanship of Sir Keith W. Price to estimate British timber requirements and possible supplies up till 1955. This report estimated the softwood requirements on a strictly austerity basis at approximately 1,500,000 standards a year, hardwood requirements at approximately 75,000,000 cu.ft. and plywood at approximately 575,000,000 sq.ft. a year. There was every prospect of the hardwood and plywood supplies being found from various sources, but Great Britain could not be certain of obtaining more than about 1,200,000 standards of softwood because of currency difficulties. The exports of both Sweden and Finland were slightly higher in quantity than those of 1948, but somewhat lower prices were accepted by shippers. There was also a distinct easing in Baltic freight rates. In the autumn of 1949, a trading agreement was signed between the U.S.S.R. and Great Britain covering the shipment of about 75,000 standards of White sea and Kara sea redwood, together with 26,000 standards from the U.S.S.R. Baltic ports. Two other eastern European countries showed their intention to resume wood exports on a considerable scale by entering into trade agreements with Great Britain. In the early part of the year Poland signed a five-year agreement under which, among other things, a quantity of timber and timber products was to be furnished to Great Britain including 70,000 standards of softwoods, 10,000 cu.m. hardwoods and 50,000 sleepers. Yugoslavia also signed a similar agreement, covering trade generally, under which that country undertook to supply Great Britain with both softwoods and hardwoods. From this source about 100,000 standards of softwoods had been received together with a considerable quantity of oak and beech, both logs and lumber.

During 1949 the first steps were taken to bring the felling program of British woodlands into some relation with the annual anticipated increments. A board of trade order enforced a cut of 25% over that of 1948.

Canadian lumber production during the year remained at levels comparable with 1948. The restriction of imports by Great Britain caused by currency problems and a somewhat lower price level increased the difficulties of a number of small marginal producers. No new general contract was negotiated between the two countries, but in the autumn under the European Recovery program a special contract for 70,000 standards of Douglas fir was negotiated for shipment to Great Britain. This was allocated approximately as to 30,000 standards to U.S.A. exporters and 40,000 standards to Canada. It was believed that somewhat lower prices were taken than in earlier contracts. The Canadian Royal commission which was appointed to investigate lumber prices, particularly in the home market, returned a clean "bill of health" to the Canadian lumber trade. The report pointed out that under control domestic prices for lumber were considerably lower than those obtained for export.

The United Nations Food and Agriculture organization in conjunction with the Timber committee of the Organization for European Economic Cooperation issued during the summer their final statistics of production for 1948. The review showed a distinct easing of the softwood shortage in Europe. European timber producing countries in 1948 actually exported 1,882,000 standards, or 33.3% more than it was estimated could be achieved. At the same time the European Recovery program office issued a commodity study on lumber and lumber products. The report estimated that in western Europe, excluding Germany, about 3,330,000 dwelling units were destroyed during World War II and to replace these alone would require 14,700,000,000 bd.ft. of lumber. Another 850,000 dwellings a year would also be needed to take care of the growth of the population.

Plywood production in Europe remained on much the same footing. There was no sign of the U.S.S.R. resuming its once great plywood export trade. The imports of both U.S.A. and Canadian plywood into Great Britain were much reduced because of currency difficulties. In Canada one large organization announced a 15% reduction in the domestic prices for Douglas fir plywood in order to encourage increased home consumption and to replace trade lost in the export market. A feature of 1949 was the marketing of considerable shipments of plywood from factories established since World War II in tropical Africa, including Nigeria and the Ivory Coast. (*See* also Forests.)

Films of 1949.—*Paper Forests* (Flory Films, Inc.). (B. L.)

Lutherans. Lutheran churches throughout the world were engaged during 1949 in three major tasks: the work of serving refugees, expanding their mission program and fighting against persecution from totalitarian states.

Within the framework of the Lutheran World federation, a department of service to refugees was giving spiritual ministrations and war made necessary the continued support of or- and expellees. Large-scale immigration from Germany, Austria and Italy to the United States, Canada, Australia, South America, New Zealand and South Africa was changing the geography of Lutheran protestantism. It had become evident that millions of Lutherans from eastern Europe would have to find a permanent place in the life of western Germany because of the limitations of mass emigration. Refugees previously settling in Italy, France, England and Sweden had created new developments. In Italy a Lutheran church body was formed in 1949, the first in history.

The absence of a peace treaty with Germany, currency restrictions and war made necessary the continued support of orphaned missions and younger churches in the near east, Africa, China, India, New Guinea and Indonesia. The Lutheran World federation organized a commission on missions to co-ordinate the evangelistic efforts of the various member bodies. An immediate result was an international approach as in Africa, where American, Swedish, Norwegian and Finnish missionaries were working in one field. Lutherans launched a new advance in their mission program in Japan when three groups began work in 1949.

The continued pressure from totalitarian states in eastern Europe created serious handicaps to minority Lutheran groups. After the arrest and imprisonment in 1948 of Bishop Lajos Ordass, new Hungarian church officials amenable to the state sought to win the favour of communism. The Lutheran World federation's representative in Czechoslovakia was ordered out of the country just a few days after the new church law went into effect. This law required that pastors and church workers be employed by the state. Opposition to totalitarian measures was extremely strong and effective in eastern Germany under the leadership of Bishop Otto Dibelius of Berlin.

A program of interchurch aid was still in progress five years after the end of the war. American Lutherans had contributed more than $50,000,000 to relief and reconstruction in Europe and Asia. Plans were in progress for continuing this type of program for at least five more years. (*See* also Church Membership.) (C. E. L-Q.)

Luxembourg. An independent grand duchy of western Europe, Luxembourg is bounded on the south by France, on the northwest by Belgium and on the northeast by Germany. Area: 1,010 sq.mi., including the 11 sq.mi. of the uninhabited Kammerwald forest and a small village annexed on April 15, 1949, as accepted under the six-power agreement on March 26, 1949. Pop.: (Aug. 20, 1945, census) 281,572, (mid-1948, est.) 292,000. Language: Luxembourgian (idiomatic) and officially) French and German. Religion: Roman Catholic 8%. Capital: Luxembourg (pop., Dec. 31, 1947, est., 61,996). uler, Grand Duchess Charlotte.

History.—The year 1949 was undisturbed by any crisis or overnment change. Linked with Belgium in an economic and ustoms union, the grand duchy aligned the Luxembourg franc ith the Belgian when the latter was devalued on Sept. 22 (*see* ELGIUM).

Having relinquished neutrality from April 15, 1948, Luxemourg took part in the various important international meetings, haping its foreign policy to conform with the general political nd economic trends of the western powers. On April 4 Joseph ech, minister of foreign affairs, signed the North Atlantic eaty and the instrument of ratification was deposited on June 7 with the state department in Washington, D.C.

Within the framework of the Organization for the European conomic Cooperation (*q.v.*) the grand duchy upheld a policy of progressive return to free circulation of goods in Europe. ech, speaking in Paris on Nov. 2, commented that, although all nust make sacrifices, no country should be asked to subscribe o the ruin of its key industry: Luxembourg was particularly ulnerable, since its steel and iron industry was the whole basis f its economic life.

Education.—(1948) Schools: elementary 966, secondary 7, technical 3.

Finance.—Budget (1949 est.): revenue 3,106,000,000 fr.; expenditure ,383,000,000 fr.

Transport and Communications.—Roads (1947): 4,254 km. Licensed notor vehicles (1948): cars 6,671, trucks 3,884. Telephones (1948): ubscribers 20,700.

Agriculture.—About one-third of the Luxembourg area is arable land. 'roduction (in metric tons, 1948): bread grains 35,958; other cereals 7,881.

Industry.—Industrial establishments (1948) 12,664, persons employed 6,513. Production (in metric tons, 1948; 1949, six months, in parenheses): pig iron 2,626,334 (1,381,034); steel ingots and castings ,452,844 (1,318,262); synthetic fertilizers 545,214 (292,178).

(G-H. D.)

Macao: *see* PORTUGUESE COLONIAL EMPIRE.

MacArthur, Douglas (1880–), U.S. general, was born on Jan. 26 at Little Rock arracks, Ark. (For his early career, *see Encyclopædia Britanica.*) After the Japanese attack on Pearl Harbor, MacArthur ed U.S. and Filipino forces in defense of the Philippines until Iarch 17, 1942, when Pres. F. D. Roosevelt ordered him to ustralia. From this point he directed and led the combined J.S.-British-Australian drive that recaptured all the territory he Japanese had seized early in the war. MacArthur himself ccepted the Japanese surrender in Tokyo bay on Sept. 2, 1945, nd was made supreme commander of Allied Powers in Japan. t was his task to carry out the occupation policies determined y the 11-nation Far Eastern commission.

In Jan. 1949, MacArthur reported that the Japanese had ccepted a democratic way of life, and "will not yield before ommunism or any other concept of enslavement." Communist lotting continued to be one of his chief problems, however, and n June 13 he accused the U.S.S.R. of inciting disorders in apan through the Communist party, and of "callous indiffernce" to repatriation of Japanese war prisoners. For a time here was discussion of the outlawing of the Communist party n Japan.

MacArthur in May recommended that Allied control of Japnese affairs be relaxed, since continued occupation was not the ault of the Japanese, he said, but of conditions in China. Later n the year he announced the end of the job of breaking up he excessively big business combines in the country. On July 8 he ordered disbanded, by year's end, occupation controls at he local level, leaving such controls operative only nationally.)n Dec. 21 he charged that thousands (the Japanese governnent said 300,000) of Japanese prisoners were still in soviet hands, and asked the U.S. government to seek the aid of a neutral nation in determining how these prisoners were being treated.

McCloy, John Jay (1895–), was born on March 31 in Philadelphia, Pa. He was educated at Amherst and Harvard, and served in World War I and in the occupation forces in Germany after that war. He later practised law in New York city, specializing in corporation law and foreign litigation. In Oct. 1940 he was appointed expert consultant to the secretary of war, and in April 1941, assistant secretary of war. He became president of the International Bank for Reconstruction and Development in Feb. 1947. Early in 1949, in that capacity, he denied charges by Poland that the International bank had discriminated against loan applications from eastern Europe and instead had helped finance French and Dutch wars against rebels in Indo-China and Indonesia.

On May 18 McCloy was appointed by Pres. Harry S. Truman as first civilian U.S. high commissioner for Germany, succeeding the retiring U.S. military governor, Gen. Lucius D. Clay. He became also chief Economic Cooperation administration representative for Germany, and U.S. representative on the three-power Allied council set up to exercise supreme Allied authority in the Federal Republic of Germany, which became operative in Sept. 1949. By a Dec. 15 agreement with McCloy, the west German government, rather than the Allied occupation forces, became recipient of ECA aid.

Macedonia: *see* YUGOSLAVIA.

McGrath, James Howard (1903–), U.S. attorney general, was born on Nov. 2 in Woonsocket, R.I. He was graduated from Providence college, Providence, R.I., in 1926 and received a law degree from Boston university, Boston, Mass., in 1929. He was city solicitor of Central Falls, R.I., 1930–34; U.S. district attorney, 1935–40; and governor of Rhode Island, 1940–45. Appointed U.S. solicitor general in 1945, he served until the next year, when he became U.S. senator from Rhode Island. From Oct. 1947 to Aug. 1949, he was chairman of the Democratic national committee. Pres. Harry S. Truman announced on July 28 that he had asked McGrath to accept an appointment as U.S. attorney general, to succeed Thomas Campbell Clark. On Aug. 1, President Truman announced that McGrath had accepted the appointment, and on Aug. 24 he was sworn in.

Machinery, Farm: *see* AGRICULTURE.

Machinery and Machine Tools. The downward trend in the machine tool industry of the United States continued during 1949, when shipments barely touched $250,000,000, compared with $286,000,000 the previous year and a wartime high of $1,360,000,000. The year opened in lively fashion, with the new-orders index of the National Machine Tool Builders' association at 93 in March (with an average month of 1946–47–48 taken as 100). Then business dropped abruptly until a low point of 47 was struck in July. Recovery was slow, but in November a sharp rise occurred which brought the index figure up to 83. It stayed close to that level in December.

Unlike other postwar years, in 1949 new machine tool orders exceeded shipments. Overseas sales accounted for one-fourth or more of all machine tool bookings, with England, Italy, France and western Germany the best overseas markets. The Economic Cooperation administration supplied the finances for much of the demand.

OVERHEAD VIEW of one of the bays at the General Electric company's turbine plant completed at Schenectady, N.Y., in 1949, at a cost of $30,000,000. Concrete pits in the foreground were to house machine tools so arranged that a unidirectional flow of material was assured

U.S. machine tool builders came to a realization during the year that they would thereafter have stiffer competition from the machine tool industries of England and European countries, especially Germany, but also Italy, Belgium, Sweden, Switzerland and France.

Near the end of 1949 the *American Machinist's* mid-century inventory of metalworking equipment revealed many facts about machine tools and other production machinery. It showed that the nation's metalworking industries had 3,118,702 production units installed in their plants. Of that number, 1,762,165 were machine tools and 471,237 were metal-forming units. If the machine tools in college shops and in maintenance departments outside the metalworking field were included, U.S. machine tool resources were in excess of 2,200,000 units. That was an all-time high.

It was also revealed, however, that about 42% of all metalworking equipment was 10 years old or older, and 19% was more than 20 years of age. On the average, the country's production equipment was considerably older in 1949 than it was at the end of World War II.

Other facts turned up by the *American Machinist's* inventory were: (1) there were installed in U.S. metalworking industries 396,464 lathes, 362,776 grinders, 361,935 drilling machines and 182,284 milling machines—the four basic types of machine tools; (2) the south had doubled its metalworking operations (based on machines installed) since World War II, and New England had increased its machine tool holdings 53% in the same period; (3) there had been a sizable shrinkage of machine tool facilities in the aircraft industry in the postwar period, and also in the automobile industry; and (4) the automobile industry had the highest percentage of old machines of all metalworking industries.

In technical developments, machining speeds tended to increase during 1949. The desired "mile-a-minute" cutting speeds were reached in grinding, even with small-diameter wheels, by developing wheelhead speeds up to 200,000 r.p.m. Lathe speeds had gone up to 1,650 f.p.m. in tests and to 1,500 f.p.m. on production units. Planer speeds had risen more than 50% to 310 f.p.m.

The problem of operating machines at so-called "super-critical speeds" was tackled more earnestly in 1949. Research was given an impetus by disclosure that a German patent was issued in 1931 to C. Salomon, who tested machining of aluminum at speeds of 55,000 f.p.m., of copper at 9,350 f.p.m. and of bronze at 5,300 f.p.m. Manufacturers were looking into the possibility of determining from the metallurgical make-up and condition of the metal just what the best machining speed should be, and ordering machines and tooling to fit the specifications.

The scope of carbide tools was broadened. Carbides were mounted so that the cutting force was compression rather than shear and required only simple end dressing of a rotatable preformed shape; new forms of holding were employed to reduce likelihood of cracking from brazing strains; and new forms of carbides themselves were developed.

Several companies offered in 1949 combined coolant-lubricants for use in screw machines, and additives for water to reduce its corrosiveness so its top potential as a coolant could be realized.

(B. Fy.)

Great Britain.—During 1949 the output of the machine building industries in Great Britain continued to be governed rather by ability to produce than by demand; and, despite the limitations imposed on the rate of re-equipment at home under the government's capital investment program, supplies failed to satisfy the urgent needs of British manufacturers on the one hand and of overseas customers on the other. Although the makers of industrial machinery were themselves still handicapped by lack of modern plant and by the scarcity of the necessarily skilled labour, considerable progress was made. The textile and hosiery machine group, for example, had an average monthly output valued at £5,589,000 during the first half of the year as compared with an average of £4,693,000 for the whole of 1948. Similarly, the machine tool industry, upon which all other forms of manufacture ultimately depend, averaged £2,800,000 between January and June as compared with a £2,591,000 monthly average in 1948.

Exports of machinery continued to increase and for the first nine months of 1949, while the figures were still unaffected by the devaluation of sterling, reached a total of £207,751,000, as against £170,307,065 in the same period of 1948. Although less marked, the corresponding increase in tonnage, namely from 577,000 in 1948 to 657,000 in 1949, was still substantial. Of the various main groups into which machinery exports were divided, textile machinery was easily the most important with a value for Jan.–Sept. of £30,795,000, representing an increase of nearly £4,000,000 over the equivalent figure for 1948. In the same period machine tool exports amounted to £12,138,000 or about £500,000 more than for the first nine months of 1948. Machinery thus made a substantial contribution to the overseas trade of the United Kingdom, accounting for more than 15% of all exports, and was of great importance in connection with the short term problem of securing a balance between exports and imports. In relation to the long term problem of raising the general level of productivity and, consequently, the average standard of living, however, the scale of machinery exports was greater than the country could afford. (C. H. Bu.)

Madagascar: *see* French Union.

Magazines and Periodicals: *see* Newspapers and Magazines.

Magnesium: *see* Mineral and Metal Production and Prices.

Maine.

The extreme northeastern state of the United States, Maine was admitted as the 23rd state in 1820, and is popularly known as the "Pine Tree state." Land area 31,040 sq.mi.; water area 2,175 sq.mi.; pop. (1940) 847,226; rural, 504,169; urban, 343,057. Capital, Augusta. The estimated state population for 1949 was 909,000. The official 1940 census figures and estimated 1949 populations of Maine's principal cities are as follows: Portland 73,643, (1949 est.) 79,313; Lewiston 38,598 (41,572); Bangor 29,882 (32,118); Biddeford 19,790 (21,314); Auburn 19,817 (21,343); Augusta 19,360 (20,851).

History.—Governor Frederick G. Payne (Rep.) served his first year in 1949. The Maine legislature met in biennial session in 1949, but enacted no major bills. Its greatest problem, as in 1947, was revision of the tax structure in such a way as to provide for state and local tax needs. Maine's tax laws, under study for several decades, remained unchanged at the end of the session.

Quoddy village at Eastport, built by the federal government in 1935, was sold at auction, but hope for the realization of the Passamaquoddy tidal power project was not abandoned. A joint Canadian-U.S. commission of inquiry held hearings and gathered data in 1949 and expected to release its report in 1950.

The chief officers of Maine during 1949 were: governor, Frederick G. Payne; secretary of state, Harold I. Goss; attorney general, Ralph W. Farris; state treasurer, Frank S. Carpenter; state auditor, Fred M. Berry; commissioner of education, Harlan A. Ladd.

Education.—The net enrolment in the public schools for 1947–48 was 160,191, compared with 157,456 for 1946–47 and 154,073 for 1945–46. In 1947–48 there were 6,117 teaching positions, 6,022 in 1946–47, and 5,966 in 1945–46. The state maintained 1,721 urban and rural schools in 1947–48, of which 728 were one-room buildings. The total expenditure for general support of schools (1947–48) was $19,829,475; the cost per pupil in average daily attendance (145,502 pupils) was $136.28 for the school year.

Social Insurance and Assistance, Public Welfare and Related Programs.—As of Nov. 30, 1949, there was a balance in the Maine employment security fund for unemployment benefits of $39,717,477, compared with $43,346,513 a year earlier. For the first 11 months of 1949 benefit payments were $10,165,385, covering 55,800 persons, as compared with an expenditure of $4,886,558 for 35,120 persons in the same period of 1948. Total benefits paid in 1948 were $5,482,189. The state expended for health, welfare and charities for the fiscal years ending June 30, 1949, and June 30, 1948, $12,967,966 and $11,720,999, respectively. Thirteen state institutions (correctional, insane hospitals, sanitoria) as of Oct. 31, 1948, had a total inmate population of 5,208; the total expended for the fiscal years 1949 and 1948 was $4,957,454 and $4,512,057, respectively.

Communications.—Highways of the state (1949) were: state highways, 3,076 mi.; state aid highways, 7,556 mi.; third class highways, 692 mi.; town ways, 10,512 mi.; miscellaneous, 28 mi.; total 21,858 mi. In the year ended June 30, 1949, the state expended for highway purposes, exclusive of debt and interest charges, $19,531,007, compared with $16,363,341 for 1948.

Steam railway mileage (1946) was 2,778 mi. The New England Telephone and Telegraph company reported 205,119 telephones in service as of December 1, 1949.

Banking and Finance.—During 1949 the Maine banking department supervised 32 savings banks, 30 trust companies, 30 loan and building and savings and loan associations. The following figures were for June 30, 1949: deposits of savings banks $236,183,000; total assets $268,525,000; trust company deposits, $226,283,000; total assets, $247,777,000; building and loan and savings and loan associations total resources, $33,702,000.

Table I.—*Leading Agricultural Products of Maine*

Crop	1949	1948	Average, 1938–47
Corn, bu.	462,000	340,000	529,000
Oats, bu.	3,990,000	2,924,000	3,339,000
Barley, bu.	155,000	128,000	111,000
Buckwheat, bu.	168,000	140,000	113,000
Hay, short tons	834,000	880,000	855,000
Potatoes, bu.	67,050,000	74,305,000	52,758,000
Apples, bu.	1,087,000	949,000	717,000
Beans (dry), tons, uncleaned	2,850	3,600	3,800

Table II.—*Principal Industries of Maine*

Industry	Value of Products 1948	Value of Products 194.
Pulp and paper	$221,526,431	$211,119,630
Cotton	149,581,955	129,368,253
Woollen	113,966,308	105,472,684
Boot and shoe	95,641,396	96,157,615

State receipts, expenditures and bonded debt for the fiscal year ending June 3, 1949, were, respectively: $58,156,895, $58,063,521, $10,221,500. For the year ending June 30, 1948, they were, respectively: $54,394,957, $51,993,381, $11,925,500.

Agriculture.—At the end of 1949 the state's water resources were below normal for the third successive year. Lack of rain in the summer months caused heavy crop damage in central and southern areas. On the other hand, potato yield in northern Maine reached a record 450 bu. per acre.

Fisheries.—During the first nine months of 1949, landings of fish at Maine ports amounted to 200,758,483 lb., valued at $10,774,945; compared with 203,758,760 lb., valued at $11,176,270, for the corresponding period of 1948. Total landings for 1948 were 305,037,517 pounds, valued at $16,183,596 to the fishermen.

Manufacturing.—There were 1,160 industrial firms in Maine during 1947, with production valued at $880,768,986 and 119,785 employees, of whom 81,991 were men and 37,794 were women.

Table III.—*Value of Principal Mineral Products of Maine*

	1946	1945
Clay products	$191,000	$ ...
Clay, raw	13,377	5,756
Feldspar (crude)	110,237	62,287
Mica, scrap	607	768
Peat	92,710	75,614
Sand and gravel	925,308	771,724
Stone	927,588	382,414
Miscellaneous	2,141,310	1,228,227
Total (eliminating duplication)	$4,389,000	$2,521,000

Mineral Production.—The principal mineral products (1946) in order of value were cement, stone, sand and gravel, slate. Other products included clay, lime, feldspar, mica, peat and semiprecious gems. Maine ranked 45th among the states in value of mineral production in 1946, with .06% of the value for the U.S. and Alaska.

(E. F. D.)

Maize: *see* Corn.

Malaria: *see* Child Welfare.

Malaya (Federation of) and Singapore.

The Federation of Malaya is a British dependency consisting of the settlements of Malacca and Penang and the protected states of Johore, Kedah, Kelantan, Negri Sembilan, Pahang, Perak, Perlis, Selangor and Trengganu. Area: 50,680 sq.mi. Pop. (1948 est.): 5,000,000. Singapore is a British colony comprising the island of that name together with the Cocos-Keeling Islands and Christmas Island. Area: 282 sq.mi. Pop. (1948 est.): 964,000. High commissioner of the Federation (1949): Sir Henry Gurney; governor of Singapore: Sir Franklin Gimson. A commissioner-general for Southeast Asia exercises, as part of his functions, general supervisory authority. Commissioner-general (1949): Malcolm Macdonald.

History.—In the federation the disturbances, which had broken out in June 1948, continued to dominate the situation in 1949. The actual number of British and Gurkha troops engaged was not disclosed but was believed to be about a division; and they were assisted by the forces of the Malay regiment, air force units, naval coastal patrols and at least 20,000 police. But in spite of the strength of the forces involved and the fact that the Communist-led bandits were never assumed to number more than 5,000, the hard core of the revolt was not broken. Up to November approximately 900 bandits had been killed and 525 captured, as compared with 21 officers and 99 other ranks killed; 15 officers and 162 other ranks wounded; 264 police and 568 civilians, including 34 Europeans, killed. During September there was an intensification of the campaign, combined with an offer by the government to those who had been consorting with the bandits—in many cases unwillingly—that they would not incur the death penalty for the carrying of arms if they surrendered voluntarily to the authorities. But the offer met with small response and the campaign dragged on.

INSTALLATION of the new Sultan of Perak (seated right on dais) at Kuala Kangsar, April 16, 1949. Seated left on the dais is Sir Henry Gurney, high commissioner of the Malay federation

One effect of the troubles was to bring the leaders of the various communities closer together. In January a Communities' Liaison committee was formed; it reflected the variety of races that make up Malaya, comprising 6 Malays, 6 Chinese, 1 Indian, 1 European and 1 Eurasian under the chairmanship of a Ceylonese. In March this committee issued a statement in which it stressed the need for close understanding and cordial co-operation between all those races; and in another statement, issued in September, it showed that a basis had been agreed upon for a policy of political, social and economic development of the country.

In May it was announced in the British parliament that in view of the increased burdens which Malaya had had to bear, the British government had decided to offer a free grant of £20,000,000 toward the Malayan war damage compensation scheme in place of the £10,000,000 offered in the previous year; and also that an interest-free loan of 160,000,000 Straits dollars (approximately £18,500,000) was to be made available to the federation government to be repaid in annual instalments (to the extent that it was taken up) commencing in 1956. In the same month the federation government floated a £8,050,000 loan on the London market to finance rehabilitation and development projects including railway and road communications, drainage and irrigation schemes, and other public works.

Law and order was maintained in Singapore, which was the scene of a number of conferences, both local and international, including a conference of British governors and service chiefs in southeast Asia under the chairmanship of the commissioner-general in January.

The legislatures of both territories accepted the recommendations of the Commission on University Education in Malaya and passed legislation creating the University of Malaya, of which Malcolm Macdonald was appointed by name in the constitution as first chancellor. The university was formally opened in October.

In spite of the troubles in the federation, production of rubber and tin was maintained; and at Kuala Lumpur in February for the first time in the history of Malaya there took place a Trades Union conference attended by some 150 delegates representative of 80% of the unions of the country.

Finance and Trade.—The currency is the Straits dollar, valued on Nov. 15, 1949, at 32.67 cents U.S. Federation: revenue (1949 est.) Str.$307,302,020, expenditure (1949 est.) Str.$366,341,880, imports (1948) Str.$490,859,576, exports (1948) Str.$616,922,856. Singapore (1948): revenue Str.$73,746,016, expenditures Str.$92,492,455, imports Str.$1,300,342,063, exports Str.$1,113,120,406.

Principal exports: Rubber, tin, tin ore, palm oil, coconut oil and copra. The trade figures are exclusive of trade between Singapore and the federation; and note should be taken that as an entrepôt centre Singapore was the federation's chief source of supply and chief customer, to the extent of Str.$370,915,301 and Str.$498,967,682 respectively in 1948.

FILMS OF 1949.—*Voices of Malaya* (British Information Services).

(JO. A. HN.)

Malta.

Malta is a British colony in the central Mediterranean. Area: 122 sq.mi. Pop. (1948 census): 305,991. Governor, 1949: Sir Gerald Creasy; prime minister: Paul Boffa.

History.—A delegation from the government of Malta consisting of the prime minister, Paul Boffa, the deputy prime minister, Dom Mintoff, and the commissioner general in London, Edward Ellul, visited London during the summer of 1949 in order to obtain further assistance toward the colony's finances and economy. The three main objectives of the delegation were an indefinite prolongation of United Kingdom contributions to the cost of food subsidies (which were due to end in 1949); the maintenance of the existing high levels of employment in Malta by the British armed services and more direct benefits to Malta under the European Recovery program.

The British government requested information on the economic and financial position in Malta; but instead of supplying this information in a suitable form the Maltese government presented an "ultimatum." The British government thereupon stated that it was not willing to continue the talks and Boffa withdrew the ultimatum on Aug. 15. The talks continued but the British government was unable to concede the major claims of the Maltese government, although it was decided to reduce the rate of dismissals of persons employed in the dockyards and the war office offered to give work in Cyrenaica to Maltese workers.

Finance and Trade.—Currency: pound sterling. Budget (1949–50 est.): revenue, £5,380,962; expenditure, £5,586,683. Foreign trade (1948): imports £16,033,815; exports £1,232,258.

BIBLIOGRAPHY.—*Malta: Recent Requests for Financial and Economic Assistance* (H.M.S.O., London, 1949); Sir Harry Luke, *Malta: An Account and an Appreciation* (London, 1949).

Manchuria: *see* CHINA.

Mandated Pacific Islands: *see* TRUST TERRITORIES.

Mandates: *see* TRUST TERRITORIES.

Manganese.

The outputs of the more important manganese producing countries, as listed in Table I, usually are about 90% of the world total, although there are about 35 minor producers.

United States.—The salient features of the manganese industry in the United States are shown in Table II, as reported

Table I.—*World Production of Manganese Ore*

(In thousands of short tons)

	1942	1943	1944	1945	1946	1947	1948
Brazil	337.5	303.8	162.0	269.7	164.4	156.7	155.7
Chile	78.6	125.8	48.5	8.2	22.6	21.4	26.0
Cuba	274.8	343.0	284.3	218.5	144.2	53.6	32.0
Gold Coast	761.7	589.0	528.6	675?	857.2	560.7	705.6
India	848.1	666.8	414.7	235.5	283.5	503.2	350.8
South Africa	434.8	241.5	117.8	126.2	262.1	317.7	304.7
U.S.S.R.	2,010 ?	?	508 ?	2,480 ?	1,870 ?	1,980 ?	?
United States	190.7	205.2	247.6	182.3	143.6	131.6	131.1
Total	5,700	4,450	3,200	4,675	4,030	4,299	4,300

Table II.—*Data of Manganese Industry in the U.S.*

(In thousands of short tons)

	1942	1943	1944	1945	1946	1947	1948
ine shipments .	190.7	205.2	247.6	182.3	143.6	131.6	131.1
Metallurgical ore	178.0	195.1	241.2	174.3	134.4	125.4	119.8
Battery ore .	12.4	10.0	6.2	8.0	8.3	6.2	10.8
ports, General .	1,328.8	1,429.6	1,157.9	1,461.9	1,749.2	1,541.8	1,256.6
ports for Consumption .	1,583.0	1,511.6	1,315.7	1,311.3	1,514.5	1,298.0	1,473.5
Brazil	326.5	373.4	197.4	242.3	86.0	157.8	160.5
Chile	4.5	16.3	6.0	91.3	143.5	42.1	10.3
Cuba	156.3	211.8	467.1	293.6	158.7	57.1	32.8
Gold Coast .	189.2	216.8	160.0	208.7	279.7	217.3	218.2
India	600.8	462.9	346.8	210.5	321.3	284.5	314.8
South Africa .	234.2	127.7	41.4	62.0	243.7	192.9	283.4
U.S.S.R.	17.8	4.6	—	151.3	241.9	289.0	384.1
onsumption . .	1,481.7	1,588.3	1,593.1	1,485.9	1,136.7	1,419.1	1,538.4

y the U.S. bureau of mines.

The domestic output of manganese ore continued to decline. hipments from the mines showed only a minor decline in 1948, 31,100 tons against 131,627 tons in 1947, but there was a narp drop in 1949, the total for the first three quarters being nly 86,022 tons. Receipts of foreign ores were 1,034,168 tons n the first three quarters of 1949, compared with 1,256,597 ons in the full year 1948. The drop in ore imports was partly ffset by increased imports of ferromanganese in 1947 and 1948, ut in 1949 these dropped back to the 1947 level. While the hree-quarters total of 1949 for general imports of ore was ,034,168 tons, against 984,127 tons of imports for consumption, he corresponding consumption figure was 1,060,179 tons, indi-ating even heavier withdrawals from plant stocks.

(G. A. Ro.)

Manitoba.

Central province of Canada and geographic centre of North America, Manitoba was established s a province on July 15, 1870; area: 246,512 sq.mi. (26,789 q.mi. water); pop. (1946 census): 726,923, of which 389,592 vere rural. Capital: Winnipeg (229,045). Other cities are: St. oniface (21,613); Brandon (17,551); Portage la Prairie 7,620); and Flin Flon (municipal district, 7,595).

History.—The 23rd legislature was elected on Nov. 10, 1949, nder the premiership of Douglas Lloyd Campbell, heading a oalition of Liberal-Progressive and Progressive-Conservative nembers. The principal issues of the campaign were the con-inuance of coalition and the financial and public-utility record f the government. The coalition increased its representation o 43 of the 57 member assembly.

The first step in an increasing power development was taken y the government by starting construction of a 114,000 h.p., 20,000,000 power site near Pine Falls on the Winnipeg river. ural electrification reached a total of 16,379 farms and 353 owns and villages by 1949, maintaining the objective of approx-nately 5,000 new farm units per year.

The first joint permanent provincial committee of representa-ives of municipalities, teachers and school trustees was created o deal with educational objectives of mutual interest, and like-vise a new urban municipal association was established to deal rith local government problems affecting urban and suburban itizens.

An experiment in whale meat processing was carried out at Churchill on Hudson bay when in 22 days, 206 white whales vere caught by the native population using aboriginal fishing nethods. These were converted into 88,000 lb. of meat for fur nimal and poultry feeds and 45,000 gal. of oil for English nargarine production. A modern plant was erected, and modern nethods of catch were to be adopted.

Education.—Enrolment in public schools for the year ending June 30, 948, dropped 331 to 120,482, of which 20,497 were in secondary grades. pecial permit teachers were reduced to 656 in 1948–49. A division of ublic library service was added to the department of education in 1949, nd a travelling library box and open shelf reference service were orig-nated for rural citizens.

Public Health and Welfare.—A combined Canadian-Manitoba-Red Cross ospital plan was started to provide hospitalization for the northern areas. The first municipal farm home for the aged was erected at Portage la Prairie in 1949. The Manitoba Health plan had developed to 13 health units covering 71 municipalities serving 250,000 people, 2 regional diagnostic units (Dauphin and Selkirk), with 116 new hospital beds and 718 beds under construction. Eight new hospitals had been erected, with additions and replacements to three others.

Communications.—A radio-telephone service was established for the far north by the telephone system of the Manitoba government; new lines were laid to the new mining areas of Lynn Lake and Snow Lake; and increased expansion resulted in a total of 384,691 wire miles and 126,247 subscriber stations by Sept. 30, 1949. Manitoba's highways included 9,117 mi. of gravelled road, 575 mi. of bituminous surface and 72 mi. of concrete. Seven radio stations operated in Manitoba, with the latest outlet opening in Dec. 1949, making four in the Winnipeg area, one in St. Boniface (French), one in Brandon and one in The Pas.

Finance.—No change occurred in the provincial taxation structure. At March 31, 1949, the net debt position was $47,571,470, with a self-sustaining utility debt of $46,280,000. The operating surplus for the period was $4,425,362, with revenue of $33,304,555. Expansion of telephone, electrification and highway construction was increasing the gross debt.

Agriculture.—Estimated returns for the 1949 production: field crops $165,000,000; livestock $53,000,000; poultry $19,000,000; dairying $30,000,000; including all other classes, a gross agricultural production of $275,000,000 was indicated, which would be supplemented by additional payments for coarse grains from the Canadian Wheat board. Grasshopper infestation was sharply increased. The corn borer reached Manitoba crops for the first time. A Red River co-operative farrowing centre was organized in 1949 at Morris to aid hog raising. A five-year degree course in agriculture was inaugurated in 1949 by the agricultural faculty of the University of Manitoba.

Fishing and Fur.—In 1948–49 commercial fishermen numbered 6,767 and marketed 31,528,700 lb. of fresh-water fish, valued at $3,181,286, with a market value of $5,414,583. There were 10,577 trappers in the same period, of whom 2,284 were registered. The wild catch value was $2,552,803, and 757 fur farms produced $958,483 worth of furs. The estimated value of furs processed in Manitoba was $2,367,198, and the value of furs exported from the province, including furs from other provincial areas, was $9,873,277. Resident big-game hunters, totalling 27,574 (a record), and nonresident, 489, killed in 1948 a total of 11,723 deer, 80 moose, 46 caribou (barren lands), 484 elk and 61 bear; 14,301 resident and 811 nonresident game-bird hunters killed 98,912 ducks and geese.

Manufacturing.—In 1948 the gross value of manufacturing was $483,000,000, with 42,000 employed and with a pay roll of $87,000,000. Meat packing remained the leading industry.

Mineral Production.—In 1948 production was estimated at a value of $26,767,180, of which $19,374,615 represented metals, $6,073,817 structural materials and $1,319,279 nonmetallics. Copper, gold, zinc, gypsum and salt led in production values. (J. L. J.)

Manufactures, Census of: *see* CENSUS DATA, U.S.

Mao Tse-tung

(1893–), chairman of the central committee of the Chinese Communist party, was born in Shao Shan, Hunan province, and educated in Changsha. He was an active revolutionary as early as 1911, and in 1921 he participated in Shanghai in the founding of the Chinese Communist party. After the Communists united with the Kuomintang to put down militarists of the north, Mao began organizing peasants into an army, and in 1931 he became political commissar of the 4th Red army. From 1937 to 1943 he generally led the battles against the invading Japanese, although friction between his forces and Chiang's occurred throughout the Japanese war. Mao was in charge of the noted Red 8th route army, and after 1942 was chairman of the Communist party of China.

Through much of 1948 and 1949, he led or directed the Communist forces that progressively drove the nationalists back, until by autumn of 1949 the reds controlled virtually all of China. On Sept. 30, 1949, as the Chinese People's Political Consultative council launched the new People's (Communist) government, Mao was elected chairman of the new government. (*See* also CHINA.)

Maple Sugar: *see* SUGAR.
Maps: *see* CARTOGRAPHY; GEOGRAPHY.
Margarine: *see* VEGETABLE OILS AND ANIMAL FATS.
Mariana Islands: *see* TRUST TERRITORIES.

Marine Biology.

Benthoscope.—Biological scientists of the Allan Hancock Foundation for Scientific Research at the University of Southern California, Los Angeles, attracted wide interest in 1949 with explorations of the depths of the sea in the new benthoscope. The 7,000-lb. round steel ball, with an inside diameter of approximately five feet, an entry hatch and two fused quartz windows, one for motion-picture taking, the other a quartz eye or observation porthole, was designed to accommodate the scientist within its hold, together with technical facilities never before used in ocean exploration. Within the ball were oxygen tanks, fans, soda lime respiratory screens for the absorption of respiratory gases, cameras and leads for surface telephonic communications. After preliminary descents in relatively shallow beach waters, the benthoscope descended approximately 4,500 ft. in the Pacific ocean 20 mi. south of the Santa Cruz Islands off southern California.

The organisms seen through the observation porthole were described as various depth gradients were passed. At 460 ft. there were many lantern fish; at 2,500 ft., schools of luminescent shrimp), at 4,000 ft., eerie flashes of light from lantern fish and other unidentified phosphorescent organisms.

Research on Marine Life.—In an attempt to discover what factors operated to reduce the schools of sardines along the northern Pacific coastal waters, scientists at the Scripps Institute of Oceanography, La Jolla, Calif., launched a six-ship survey which covered over 100,000 sq.mi. of ocean, extending from Lower California to the mouth of the Columbia river. Commercial catches which in former years averaged 600,000 tons annually, dropped to only 150,000 tons in 1948. From the data gathered it was deduced that changes in the relative distribution of ocean currents altered the spawning grounds as well as the biological constitution of the waters which furnish the food of the fish. Such a biological shift naturally created ecological factors unfavourable to the sardines, but perhaps favourable to other populations such as the *hake,* which were found in greater numbers in the surveys completed.

A scientist at the American Museum of Natural History, New York city, reported the appearance of a lone specimen of the rare whale shark (*Rhineodon typus*) in the Caribbean sea near the Venezuela coast. Previous records showed only two such specimens reported from the Caribbean. The 30 ft. specimen with a 4-ft. width of mouth typified its kind; it had a 4-in.-thick hide of tough fibres which nothing that swims in the sea can penetrate. Man's harpoons and bullets glance off harmlessly save when the animal is relaxed, or when it is shot exactly at a perpendicular angle.

The recording of undersea noises continued to engage scientists at the Woods Hole Oceanographic institution, Mass. With microphones set at a depth of 60–90 ft. in the lower Saguenay river, Que., Can., many recordings of the noises of the white porpoise (*Delphinapterus leucas*) were made. It was hoped that careful differentiation of the sounds might eventually result in distinguishing various cretaceans.

After reviewing previous work on the feeding habits of oysters, a scientist at the Marine Biological laboratory, Milford, Conn., completed an investigation which indicated that not only do oysters discriminate in the matter of relative size and shape of food particles, but also qualitatively utilize a sort of chemotaxis, whereby the nature of the chemical secretions of various microorganisms may be distinguished.

Such discrimination suggests that it may be possible to enrich the food supply of suitable microorganisms and thus hasten growth and maturity of this valuable sea food.

A specimen of a western Atlantic bivalve, *Tellina magna,* normally found plentifully from the Carolinas to the West Indies, was recovered in some seaweed (*Lamnaria*) at Inveresk Gate, Musselburgh, Midlothian by scientists of the Institute of Seaweed Research. This was the first recorded instance of any marine invertebrate native to the American coast being found in British waters.

LOWERING A TRAWL NET from the "Albatross III," fishery investigation vessel of the U.S. fish and wildlife service, to catch samples of deep-sea fish off the North Carolina coast in 1949. A population check on the New England fishing banks was also made from the vessel in 1949

According to a report from the British museum, a narwhal (*Monodon monoceros*) from arctic waters was found stranded at Rainham, Essex, Eng., in the estuary of the Thames river, the fourth to be recorded in British waters since 1588. It was a female 12 ft. in length, of usual body shape and pigmentation.

A rather important contribution to knowledge of antarctic flora, with special emphasis upon the lichens, was published in the *Antarctic Research Report.* The report covered materials collected in the several expeditions sponsored by the British, Australian and New Zealand governments in 1907–09, 1911–14 and 1929–31. The study indicated that species found are characteristically endemic, the majority (118 out of 124) occurring nowhere else in the world. This pointed to prolonged isolation of the antarctic islands from the rest of the world.

Other Research.—Studies made by the department of scientific and industrial research indicated that the odours and spoilage of catches of commercial fishes on trawlers result from the presence of sea water bacteria at first associated with the fish surfaces and later by invasion of these organisms into the flesh. To correct these conditions it was recommended that fish be thoroughly iced after gutting and washing and that care be taken not to bruise, tear or crush the fish in storage tanks.

A scientist of the French navy's information service described how radar and echo-ranging devices had been used to locate and identify schools of fish. Such detection and identification could be applied at distances varying from 650 ft. to more than one mile distance from the ship. This report was further substantiated by the director of fisheries of the United Kingdom, who asserted that the application of similar techniques made it possible to identify schools of herring, sardines and other fish at considerable distances.

The Swedish expedition of the "Albatross" reported after examining 65-ft. cores taken from the Atlantic ocean bottom that unexpectedly large amounts of radium and uranium are precipitated by the sea. A scientist found these elements 20 times as concentrated in the ocean muds as in continental rock. He estimated that if a core could be obtained from a depth of 10,000 ft., the story of earth stratification would date back approximately 400,000,000 yr. (*See* also OCEANOGRAPHY; ZOOLOGY.)

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(F. M. B.)

Marine Corps.

The United States marine corps, established Nov. 10, 1775, by resolution of the continental congress, has been an integral part of the United States naval establishment since 1798. It is headed by a four-star general, who serves a four-year term as commandant by appointment of the president. The 19th commandant, Gen. C. B. Cates, assumed office Jan. 1, 1948.

The missions of the marine corps during 1949 were mainly those set forth in the National Security act of 1947: to provide fleet marine forces of combined arms, with supporting aviation, for service with the fleet; to develop tactics, technique and equipment for amphibious warfare, and to provide security detachments for the naval establishment ashore and afloat.

The fleet marine force, the amphibious striking arm of the fleet, was maintained in a high state of readiness during 1949. Composed of two marine divisions of infantry and two air wings (peacetime strength), the fleet marine force held manoeuvres or training exercises in the Caribbean, Alaska, North Atlantic, southern California and Chesapeake bay areas, and at Guam. One reinforced infantry battalion of the fleet marine force was assigned to duties afloat throughout the year with the U.S. naval forces in the Mediterranean.

Marine corps aviation, in conjunction with the fleet marine force, continued to develop techniques and procedures for close support of amphibious operations during the year, and participated in manoeuvres with the fleet marine force.

Efforts were concentrated in 1949 on bringing the marine corps reserve up to strength and improving the training. The reserve expanded to approximately 125,300 in 1949, of whom approximately 40,690 were organized reserves. In the summer, 1,103 officers and 15,898 enlisted men of the organized reserve (ground) received annual field training for 15-day periods. A total of 1,036 officers and 2,468 enlisted men of the organized reserve (aviation) participated in training and manoeuvres at regular summer encampments.

During the year the regular marine corps reached a top trength of 87,417.

In June the marine corps established an annual women officers training class at Quantico, Va., to provide commissioned officers for both the marine corps and its reserve. (C. B. Cs.)

Marine Insurance: *see* INSURANCE.
Market Gardening: *see* VEGETABLES.
Marketing: *see* BUSINESS REVIEW.

Marriage and Divorce.

During 1949 most of the evidence indicated a return to prewar patterns of marriage and family life. Both marriage and divorce rates declined generally.

Shortly after World War II, divorce rates rose sharply in the British Isles, western Europe, including the occupied countries and the United States. In 1949 there seemed little doubt that this postwar peak was past. In spite of further decreases in many nations, comparable with those of the previous year, divorce rates were expected to resume shortly the upward trend of the previous several decades.

BILLBOARD in Frankfurt, Ger., carrying unequivocal ads for marriage partners in 1949; because of German war losses, women continued to out-number men during the year

United States.—The marriage rate (10.8 per 1,000 population) declined for the third successive year; the number of marriages was estimated at 1,625,000, a drop of nearly 10% from the provisional total of 1,802,895 in 1948 and a decrease of over 18% from the final total of 1,991,878 for 1947. The U.S. public health service estimated that 29,953 of the marriage licences issued in 1948 and 22,965 in 1947 were not used, and concluded that for any given year marriages tend to be from 1 to 3% below the number of marriage licences issued. Including annulments (about 2% of the total), divorces were not expected to exceed 380,000—decreases respectively of 6% and 21% from the 405,000 divorces of 1948 and 483,000 in 1947.

*Marriages and Divorces with Crude Rates: United States, 1870–1948**

(Rates per 1,000 estimated midyear population. Figures for 1948 provisional, for 1947 revised)

Year	Estimates: midyear population	Marriages Number	Marriages Rate	Divorces Number	Divorces Rate
1948	146,113,000	1,802,895	12.3	405,000	2.8
1947	143,414,000	1,991,878	13.9	483,000	3.4
1946	141,235,000	2,291,045	16.4	610,000	4.3
1945	139,585,518	1,612,992	12.2	485,000	3.5
1944	138,083,449	1,452,394	11.0	400,000	2.9
1943	136,497,049	1,577,050	11.8	359,000	2.6
1942	134,664,924	1,772,132	13.2	321,000	2.4
1941	133,202,873	1,695,999	12.7	293,000	2.2
1940	131,970,224	1,595,879	12.1	264,000	2.0
1930	123,076,741	1,126,856	9.2	195,961	1.6
1920	106,466,420	1,274,476	12.0	170,505	1.6
1910	92,406,536	948,166	10.3	83,045	0.9
1900	76,094,134	709,000	9.3	55,751	0.7
1890	63,056,438	570,000	9.0	33,461	0.5
1880	50,262,382	453,000	9.0	19,663	0.4
1870	39,904,593	352,000	8.8	10,962	0.3

*Adapted from Tables 8 and 9, "Provisional Marriage and Divorce Statistics," *Vital Statistics—Special Reports,* Nov. 4, 1949, U.S. Public Health Service.

Studies found that not until the 15th year of marriage does death dissolve as many unions as divorce; that one-fourth of the total labour force was female, of which approximately one-half was married, one-sixth divorced; that about 36,000,000 men were married (13% more than once), of whom nearly one-third were under 35 yr. (6% previously married); that one-fifth of all men married a second time had marriages exceeding 20 years in duration; that one-sixth of all recent brides had been widows or divorcées; that the total birth rate of women married a second time was one-seventh less than for wives whose marriages were not interrupted during the childbearing period; and that, for all ages of 15 yr. and above, the number of males per 1,000 females was 977, the first time in history that females had outnumbered males, with the surplus by 1955 expected to exceed 1,000,000 over males of 30 years and older.

Effective in April, the first divorce law passed in South Carolina cited grounds of adultery, desertion, physical cruelty and habitual drunkenness. In the Catholic archdioceses of New York, N.Y., Rochester, N.Y. and Hartford, Conn., a new rule permitted mixed marriages to be performed in church but they could not be celebrated at the altar or with a nuptial mass.

Great Britain.—The long-awaited report of the royal commission on population included recommendations that the national health service be empowered to give contraceptive information to all married persons desiring it, that parenthood clinics be set up to deal with the increasing number of childless marriages, that sex education and homemaking should be widely developed as well as adult extension courses in marriage, that family allowances should be increased, and that incentives should be found to encourage the professional classes to have more children. On the basis of the 1947 census, the registrar general estimated that in England and Wales the total number of women exceeded that of men by 2,308,000. The Marriage Reform committee, claiming that 100,000 British couples were living out of wedlock because either the man or woman was unable to divorce the legal mate, demanded that a royal commission be established to study existing divorce laws and to consider their liberalization.

The Birmingham Marriage Guidance council reported that the three major causes of marital disharmony were ignorance of sex, lack of spiritual foundation and inadequate or unsuitable housing and, that of the marriages investigated, half of them involved civil rather than church weddings. The London Catholic Marriage Advisory council tabulated the problems of 1,543 clients and reported that 17% concerned annulments, 13% related to legal problems, 10% were medical, 8% dealt with church rules or moral questions, 6% were premarital and the rest were miscellaneous; of 447 clients with marital problems, 159 represented marriages between Catholics and non-Catholics.

Canada.—The dominion bureau of statistics found that the size of families was decreasing steadily among younger French-Canadian married couples. Another study indicated that in 1926 the divorce rate was $\frac{1}{17}$ that of the United States, but within the intervening years it had increased to one-seventh. There was continuing demand from Quebec and Newfoundland for separate divorce laws since all actions from these provinces must be adjudicated by the Canadian parliament. At the first National Congress of the Service of Preparation for Marriage, it was reported that of 15,000 marriages in the province of Quebec in 1948 about 3,000 started with the aid of the service.

Other Countries.—In Europe generally, the divorce rate was falling, particularly in Belgium, Denmark, France, the Netherlands and Norway and Sweden, although the marriage rate showed no great decline.

Offering a bonus of 22,000 fr. upward, Belgium was encouraging families to build new homes. Czechoslovakia and Poland made civil marriages mandatory but these could be followed by religious ceremonies; divorce restrictions were tightened, with divorce by mutual agreement no longer permitted; illegitimate children were given legal rights equal to those of children born in wedlock. In France the Young Women's Family service was providing training in homemaking to girls in several centres. After the ban on marriages of U.S. soldiers to German civilians was lifted, Frankfurt army headquarters reported that about 2,000 such weddings had been authorized. From Israel came the report of a drop of 40% from the divorce rate under British mandate.

Both marriage and divorce rates were increasing in Italy and its first marriage-counselling centre was opened at Milan under the direction of Dino Origlia; the general council of the International Union of Family Organizations convened at Rome in September. In Japan, where concern was expressed at the alarming rise in abortions, parent-teacher associations were formed in a majority of the new elementary and secondary schools. To encourage parenthood, Luxembourg extended its allotment system to provide 5,000 fr. for the first child and 3,000 fr. for each additional birth. Through its church and school department, Norway was utilizing a national committee of physicians and clergymen to deal with problems of family-life education.

The supreme court of the Soviet Union urged the lower courts to strengthen marriage and family ties by not granting divorces for accidental or transitory causes (including "casual cohabitation"), by encouraging sex education through parental example and by leading a social but disciplined life; the ministry of justice prohibited its citizens from marrying foreigners. As of July 1, working-class couples in Spain were granted outright $230 to help found new homes and families. In Sweden, the Institute for Spiritual Guidance and Psychic Counselling began marriage counselling in its branches at Gottenburg, Hernösand, Norrköping, and Uppsala.

At Buenos Aires, Argentina, the first International Congress of Mothers resolved to establish an institute of family education in every Latin-American state. The second Pan-American Congress of Social Work met in Rio de Janeiro with the support of the family as its theme. An association for the study of sterility was formed in Uruguay. (*See* also BIRTH STATISTICS; LAW.)

BIBLIOGRAPHY.—Periodicals: American Institute of Family Relations, *Family Life* (1949); National Marriage Guidance Council, *Marriage Guidance* (London, 1949); United States Public Health Service, *Monthly Vital Statistics Bulletin* (1949), *Provisional Marriage and Divorce Statistics* (1949) and *Quarterly Marriage Report* (1949); Metropolitan Life Insurance Company, *Statistical Bulletin* (1949).

(C. R. A.)

Marshall Islands: *see* TRUST TERRITORIES.

arshall Plan: *see* EUROPEAN RECOVERY PROGRAM.
artinique: *see* FRENCH UNION.

aryland.

One of the original states, long known as the "Old Line state," and, in later years, as the "Free tate," Maryland is bounded on the north by Pennsylvania and elaware, on the east by Delaware and the Atlantic ocean, on he south and west by Virginia and West Virginia. The total rea is 10,577 sq.mi. of which 690 sq.mi. are water. Population n 1940 was 1,821,244, of which 1,518,481 were white. The .S. census bureau estimated the population of the state as ,175,000 as of July 1, 1949. Annapolis (pop. 1940, 13,069) is he capital. Other cities in the state, with 1940 populations, are altimore (859,100), Cumberland (39,483), Hagerstown (32,-91), Frederick (15,802) and Salisbury (13,313).

History.—The special commission on subversive activities ubmitted its report at the regular session of the general assem-ly in Jan. 1949, as a result of which a bill was passed, known s the Ober bill, to prohibit certain subversive activities. This ct was held invalid in the lower court and at the close of the ear was before the state court of appeals.

Important legislation relating to mental hospitals was also assed at this session.

There was also a one-day special session on Dec. 17, 1949, to uthorize $50,000,000 of school bonds and to make an emer-ency appropriations for public welfare.

William Preston Lane, Jr., Democrat, was elected governor n Nov. 1946, for a four-year term beginning Jan. 8, 1947.

Education.—In 1948–49, there were 879 public elementary and occupa-ional schools in the state (including Baltimore city), with a total nrolment of 211,998 and a teaching staff of 6,137. There were 224 econdary and vocational schools, with an enrolment of 104,458 and a eaching staff of 4,624. In the elementary schools, approximately one tudent in four was a Negro and in the higher schools, approximately ne in six was a Negro. The enrolment in Catholic schools for the ntire state was 62,646 white and 2,416 Negro students. The enrolment n non-Catholic private schools was 12,335 white and 182 Negro tudents. Thomas G. Pullen, Jr., was state superintendent of schools.

Social Insurance and Assistance, Public Welfare and Related Programs.—s of June 30, 1949, old-age assistance was being given to 11,786 per-ons, with a total cost for the fiscal year ended June 30, 1949, of 5,052,874; public assistance was being given to 470 needy blind per-ons, with a total cost of $217,609 for the fiscal year; aid to dependent hildren was being given to 5,297 families, with a total cost of $5,069,-10 for the fiscal year. Unemployment compensation benefits paid for he benefit year ending March 31, 1949, were $13,179,546 as compared ith $10,122,931.70 in the preceding year.

As of Dec. 1, 1949, there were 423 white and 348 Negro inmates in he four training schools for juvenile delinquents. As of Dec. 1, 1949, here were 1,563 white inmates and 2,545 Negro inmates, or a total of ,108 inmates in the four state penal institutions.

Communications.—The state roads commission expended $46,114,351 or the fiscal year ended June 30, 1949. The total road mileage in the tate highway system was 4,557, in the county system 11,979 and in he municipalities 1,075.

There were 1,320 line miles and 2,800 track miles of steam railroads nd 60.86 mi. of electric interurban railways. As of Dec. 1, 1949, there ere 606,466 telephone instruments in service.

Banking and Finance.—As of June 30, 1949, state banks and trust ompanies had deposits of $813,792,668 and total resources of $889,-72,372; mutual savings banks had deposits of $398,696,988 and total esources of $446,436,392. There were 61 national banks in the state ith deposits of $687,416,000 and resources of $740,914,000. The total esources of all state and national banks were $2,076,822,764. As of ec. 31, 1948, 374 savings, building and loan associations were com-uted to have assets of $310,746,435.

State appropriations for the year ended June 30, 1949, were $135,903,283 and expenditures were $114,560,024. State appropriations for the year ending June 30, 1950, were $131,184,376. The total bonded indebtedness of the state as of June 30, 1949, was $25,849,000 and there was a general fund surplus of $4,102,151.

Table I.—*Leading Agricultural Products of Maryland*

	1949	1948	Average 1938–47
arley, bu.	2,822,000	2,325,000	2,019,000
orn, bu.	18,354,000	19,032,000	16,382,000
ats, bu.	1,584,000	1,340,000	1,152,000
heat, bu.	6,878,000	6,032,000	7,128,000
ay (all), tons	650,000	641,000	575,000
otatoes (Irish), bu.	1,587,000	1,965,000	2,037,000
obacco, lb.	41,000,000	34,950,000	31,551,000
omatoes, market, bu.	900,000	1,008,000	
omatoes, processing, tons	165,300	110,700	
otatoes, sweet, bu.	1,350,000	1,232,000	1,337,000
antaloupes, crates	450,000	352,000	
weet corn, processing, tons	90,500	92,500	
ma beans, market, bu.	99,000	82,000	
ma beans, processing, tons	3,600	2,530	
ap beans, early, market, bu.	378,000	300,000	
ap beans, late, bu.	133,000	90,000	
ap beans, processing, tons	9,500	8,700	

Agriculture.—During the first ten months of 1949, Maryland farmers received $74,264,000 from marketing of principal crops as compared with $74,641,000 for the similar period in 1948. Livestock and livestock products brought a total of $135,525,000 in 1949 as compared with $140,505,000 in 1948. The aggregate receipts from all such sources amounted to $209,789,000 in 1949 and $215,146,000 in 1948.

Manufacturing.—The Maryland employment security board estimated the number of manufacturing establishments as of June 30, 1949, to be 3,181, employing 218,967 persons, as compared with 239,279 as of June 30, 1948, and the nonmanufacturing establishments (covered by unemployment compensation) at 33,569, employing 320,676 persons, as compared with 328,384 as of June 30, 1948.

The total payroll for the three months ended June 30, 1949, was: manufacturing, $160,315,180; nonmanufacturing, $191,291,103, making total quarterly payrolls for the 13-week period $351,606,283, as compared with $352,461,659 for the similar period of 1948.

Mineral Products.—The department of geology, mines and water resources reported the production of coal at 1,780,067 net tons in 1948 and 2,252,050 tons in 1947.

Table II.—*Mineral Products of Maryland*

	Tons	Value
Fire clay	202,054	
Other clays	465,436	$ 521,754.00
Stone	1,576,990	2,752,285.00
Sand and gravel	4,624,094	4,792,554.00
Lime	71,892	673,241.00
Miscellaneous	451,759	3,857,621.00

After numerous unsuccessful attempts, the first commercial gas well came in near Redhouse, in Garrett county, late in 1949.

Oysters.—The commercial catch of oysters in Maryland waters during the 1948–49 season was 2,702,814 bu., as compared with 2,027,381 bu. for the 1947–48 season and 2,157,858 bu. for the 1946–47 season.

(H. E. F.)

Massachusetts.

A north Atlantic state of the U.S., Massachusetts was admitted to the union on Feb. 6, 1788. It is popularly known as the "Bay state." Area: 8,257 sq.mi., including 350 sq.mi. of water; population (Massachusetts census 1945) 4,493,281; (July 1, 1949, est.) 4,713,000. The capital is Boston (pop. 1940, 770,816); other important cities (with 1940 pop.): Worcester (193,694); Springfield (149,554); Fall River (115,428); Cambridge (110,879); New Bedford (110,341); Somerville (102,177); Lowell (101,389); Lynn (98,123).

History.—State officials elected for the biennium 1949–50 were: governor, Paul A. Dever; lieutenant governor, Charles F. Jeff Sullivan; secretary of state, Edward J. Cronin; treasurer, John E. Hurley; attorney general, Francis E. Kelley; auditor, Thomas J. Buckley. Leverett Saltonstall, Republican, was reelected to the United States senate.

The 1949 session of the general court of the Commonwealth of Massachusetts was the 156th session. The legislature convened on Jan. 5 and adjourned on Aug. 31, the longest session in the history of the state. The grand total of appropriations for the fiscal year 1950 was $363,000,000 an increase of $92,000,000 over the preceding year. Included in the appropriation were bond issues of $34,000,000 for capital outlay, $3,000,000 for new construction of mental hospitals and $100,000,000 for highways.

Laws affecting civil rights and liberties were enacted, including the Fair Education Practices act. This law empowered the state department of education to order a school to admit a qualified student if he could prove that he was rejected for reasons of race, creed or colour. Religious or denominational institutes were exempt from its provisions.

Another law provided that there should be no discrimination in the Massachusetts national guard against persons wishing to join, based on race, creed, or colour.

Any one who was a member of, or supported any organization which advocated the overthrow, by force, violence or other illegal or unconstitutional methods, of the government of the United States, or of the Commonwealth of Massachusetts was barred from employment in any job in the public service.

Paul Revere Liberty Bowl.—A joint convention of the Massachusetts senate and house of representatives was held on Feb. 15, 1949, to commemorate the return to Massachusetts of the historic Paul Revere Liberty bowl. After the convention in the state house, the Liberty bowl was placed on public exhibition at the Boston Museum of Fine Arts.

Fifteen members of that secret organization of patriots, the Sons of Liberty, commissioned Paul Revere to design and make this bowl in tribute to the 92 heroic members of the Massachusetts bay house of representatives, who in 1768 defied the king's order to rescind a resolution authorizing a circular letter to the other colonies calling on them to unite in protest against unjust taxation. Their courageous stand was an important step toward a United States of America.

Paul Revere engraved this tribute on the Liberty bowl:

> To the Memory of the Glorious NINETY-TWO: Members of the Hon'bl House of Representatives of the Massachusetts-Bay, who, undaunted by the insolent Menaces of Villains in Power, from a strict Regard to Conscience and the LIBERTIES of their Constituents, on the 30th of June 1768, Voted NOT TO RESCIND

The bowl remained in the possession of the Sons of Liberty and was present at their secret meetings at the Bunch of Grapes tavern in Boston, where they plotted their resistance to the impositions of king and parliament.

Education.—In 1949 there were 1,764 public elementary schools with 356,281 pupils; 111 junior high schools with 74,515 pupils; 311 senior high schools with 132,075 pupils. The public schools of the state employed a total of 23,746 teachers at an average salary of $2,879.92. The total expenditure for public schools for support and outlay amounted to $106,054,367.82. The total enrolment in all colleges amounted to 67,144 students, a decrease of 5,375 over the preceding year. John J. Desmond, Jr. was the state commissioner of education.

Social Insurance and Assistance, Public Welfare and Related Programs.—During 1949 old-age assistance was extended to include an average of 93,596 persons at an estimated annual expenditure of $68,860,819. This was an increase of $10,000,000 over the preceding year. An average of 10,179 families received assistance for the care of dependent children at an estimated cost of $15,939,160, an increase of $3,500,000; general relief was extended to an average of 46,514 persons monthly, at an estimated cost of $13,070,435.

For the year ending July 1, 1950, the commonwealth appropriated $5,737,365 to maintain correctional institutions, including the state prison (583 inmates), prison colony (929 inmates), reformatory for men (810) reformatory for women (342 including babies under 2 years) and state farm (2,228, including the criminally insane).

Banking and Finance.—Revenue receipts of the commonwealth for the fiscal year ending June 30, 1949, were $303,548,484.29, including bonds of $18,800,000; expenditures for state government amounted to $292,901,001.30. The direct gross debt was $134,460,800 less a sinking fund of $5,248,762.92, for a net debt of $129,212,037.07.

The assessed valuation in the state, Jan. 1, 1948 totalled $6,816,385,502. The estimated valuation on Jan. 1, 1949 was $7,098,814,149.

As of Oct. 31, 1948, bank deposits in savings banks amounted to $3,185,086,795; and commercial departments of trust companies, $902,651,336; in savings departments, $277,026.189; in credit unions, $62,701,407; and in co-operative banks, $555,060,665.

Table 1.—***Principal Agricultural Products of Massachusetts***

Crops	1949	Production 1948	Average 1938–47
Corn, all bu..	1,517,000	1,435,000	1,705,000
Cranberries, bbl.	530,000	605,000	437,600
Apples, bu.	3,842,000	2,194,000	2,488,000
Hay, tons	561,000	653,000	569,000
Potatoes, bu.	2,850,000	3,548,000	2,997,000
Tobacco, lb..	12,624,000	12,017,000	9,423,000
Onions, (50 lb. bags)	417,000	361,000	—
Oats, bu	248,000	272,000	194,000
Asparagus, (30 lb. crates)	112,000	96,000	—

Table II.—***Estimated Value of Principal Products Manufactured in Massachusetts***

Products	Estimated Value, 1949
Electrical machinery, apparatus and supplies	$450,000,000
Woollen and worsted goods	440,000,000
Boots and shoes, other than rubber	356,000,000
Clothing, men's and women's, including work clothing	321,000,000
Cotton goods	229,000,000
Leather: tanned, curried and finished	194,000,000
Foundry and machine-shop products	188,000,000
Printing and publishing, book and job and newspapers	165,000,000
Rubber goods, including rubber tires and inner tubes	163,000,000
Bread and other bakery products	162,000,000
Paper and wood pulp	142,000,000
Boot and shoe, cut stock and findings	120,000,000
All other industries	3,428,000,000
Total value	$6,358,000,000

Agriculture.—Preliminary revised figures for cash receipts for 1948 (including government payments amounting to $979,000) totalled $207,418,000. This included total crop cash receipts of $78,593,000 and total live stock products of $127,846,000.

Manufacturing.—In 1949 there were 2,036 labour unions, with a total membership of 576,358.

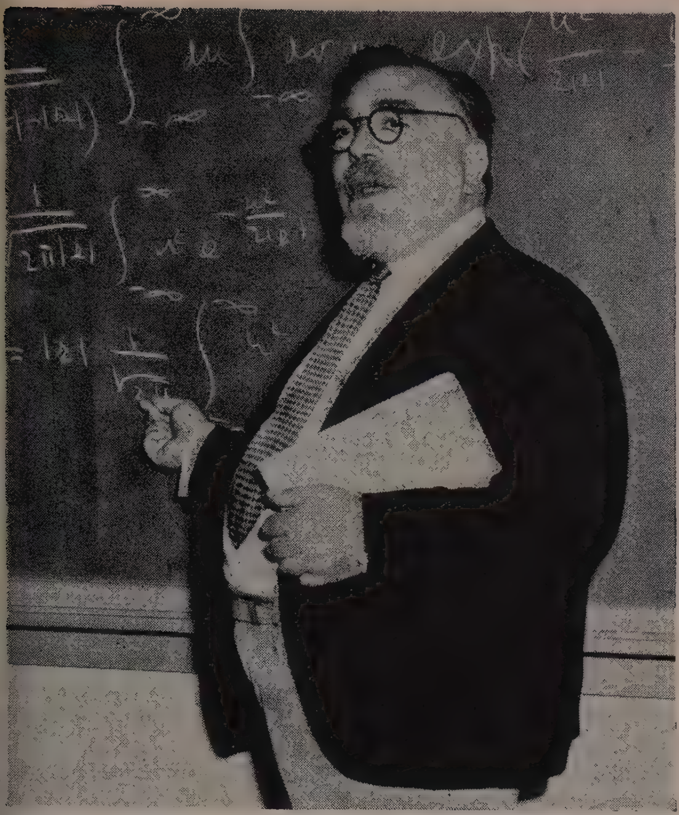
Mineral Production.—During 1946, mineral production amounted to a value of $9,745,000, of which the chief items were: lime $1,136,428, clay products 1,235,000, sand and gravel $2,909,784 and stone $4,135,238. (D. A. Dy.)

Mathematics.

The year 1949, in contrast to 1948, was not distinguished mathematically by any striking discovery. Apparently no outstanding old problem was solved, nor was any promising new method devised. Nevertheless, the output of highly technical mathematics accelerated and almost equalled in bulk that of the late 1930s. Much European work, especially German, that had been delayed in publication by World War II got into print, further overcrowding the already overcrowded journals. At the close of the year, it was too early to sift and appraise this mass of detailed contributions. The resumption of publication in both Germany and Italy, and to a far lesser extent in Japan, burdened the available space for printing to the limit. This was but one of several details indicating that, as the century approached the halfway mark, the cultivation and production of mathematics was likely to be governed by economic and military considerations to an extent which would have seemed fantastic prior to World War II. Such considerations appear to have been the significant feature of the troubled year 1949 in the progress of mathematics. They affected mathematics in all countries. Further, many mathematicians who before the war had not worked in applied mathematics were deflected from their previous interests, in which they had made their reputations, into governmental work of one kind or other.

On the economic level, the continuing increase in the cost of printing drastically curtailed the publication of mathematical research. The most urgent problem facing the mathematicians of the United States, for example, was how to finance publication. Since about 1920 this problem had steadily become more acute, until in the critical year 1949 it was imperative that a totally new policy be adopted. With the exception noted in the next paragraph, mathematical research is unpaid. It is done, mostly by university professors, on the researchers' own free time. A mathematical discovery may contain the germ of a lucrative industry, yet the man who makes the discovery receives no financial reward. His discovery can be neither patented nor copyrighted. His compensation has been that some academy or mathematical society has printed his work without cost to him. For the reasons indicated this was no longer possible. Several of the European academies suspended publication. With great reluctance the American Mathematical society (with the largest membership of any body of professional mathematicians in the world) reversed its policy of publication cost-free to authors, a policy of over half a century's standing, and would henceforth ask either the author of a research paper or the institution with which he was connected to bear a substantial part of the cost of publication. Indicative of the financial crisis of 1949 was the plight of the abstract journal, *Mathematical Reviews*, founded in 1940 to anticipate the suspension of similar European journals, which was sustained only by a subvention of $21,500 for one year from the office of air research.

The last is illustrative of the way in which the military had aided mathematical research since the close of World War II. Some of the subsidized research was in fields which, at least to a layman, seemed to have no possible connection with military needs; for example, a special case of the decision problem in mathematical logic. This type of work was not classified in the technical sense of military security and was given freely to the



NORBERT WIENER, professor of mathematics at the Massachusetts Institute of Technology and author of *Cybernetics; or Control and Communication in the Animal and the Machine*, a study which grew out of his work in mathematics and became a meeting point for a number of the social and physical sciences

public, ultimately, of course, at public expense.

The other side of the picture is typified by the report (June 27, 1949) of the Policy Committee for Mathematics. This committee in Feb. 1949 "established a Committee on Liaison with the Department of the Army and Department of the Air Forces." This and the following quotations are transcribed from the report of the Policy committee of the American Mathematical society, Aug. 1949. Their application, with obvious qualifications, is world-wide.

> The technical uses of mathematics in the Army, as well as of the other Services, began to multiply rapidly in World War II and have continued to do so. Adequate and effective utilization of mathematical skills in the National Military Establishment is therefore to some degree still a matter for pioneering. The fact that the number of highly trained mathematicians is limited creates a personnel problem which would become critical in an emergency. . . . It was decided, therefore, that the Committee on Liaison should hold itself ready to . . . act as a panel of Consultants to assist the Department of the Army in attaining the optimum technical utilization of the available mathematical skills, and to advise upon the proper allocation of available mathematical manpower, especially in time of emergency.

Subsequent to the issue of the Policy committee report, liaison relationships were established by the committee with the Personnel Policy board of the national military establishment. The Policy committee was composed of representatives of the American Mathematical society, the Mathematical Association of America, the Institute of Mathematical Statistics and the Association for Symbolic Logic.

BIBLIOGRAPHY.—A complete list of publications for 1949, with concise abstracts, is given in *Mathematical Reviews*, vol. 10. (E. T. B.)

Matthews, Francis Patrick

(1887–), U.S. government official, was born on March 15 at Albion, Neb. He was graduated from Creighton university in Omaha, Neb., in 1910 and received his law degree from the same institution in 1913. He became a successful lawyer and engaged in a number of business and civic enterprises, and in 1932 was elected chairman of the Democratic committee for Douglas county, Neb., in which Omaha is situated. From 1933 to 1949 he was counsel for the Reconstruction Finance corporation in Nebraska and Wyoming. In 1942 he was made chairman of the executive committee of the National Catholic Community service, one of the elements of the United Service Organizations. For his U.S.O. work he was given the medal of merit by Pres. Harry S. Truman; he also was accorded high honours by the pope. In 1946 President Truman appointed him to the president's committee on civil rights, and on May 13, 1949, announced that he had nominated Matthews as secretary of the navy.

Maurice and Laura Falk Foundation, The: *see* SOCIETIES AND ASSOCIATIONS.

Mauritania: *see* FRENCH UNION.

Mauritius.

A British colony in the Indian ocean. Area: *c.* 720 sq.mi. Pop. (mid-1948 est.): 442,000, including 279,000 Indians. The capital is Port Louis. Dependencies: area, *c.* 87 sq.mi.; pop. *c.* 14,000. Governor in 1949: Sir Hilary Blood.

History.—A campaign to stamp out malaria was inaugurated during 1949 and made good progress. A commission of inquiry into the workings of the supply control department cleared the controller of charges of bribery but was in general critical of the department and found apparent evidence of fraud among minor employees. The visit to the island in May of the Indian cruiser "Delhi" was the social event of the year.

Finance and Trade.—The unit of currency is the rupee, which in Nov. 1949 was valued at 21 cents U.S. Budget (1947–48): revenue Rs. 39,856,646; expenditure Rs. 49,147,495. Foreign trade (1948): imports Rs. 136,265,540; exports Rs. 144,345,359. Principal export: sugar. The 1949 sugar crop was estimated to reach the record size of 410,000 metric tons. (Jo. A. Hn.)

Meat.

U.S. production of all meats increased very moderately in 1949, the total being estimated at 22,130,000,000 lb. at least, compared with 21,599,000,000 lb. in 1948; the average in 1937–41, however, was only 17,675,000,000 lb. Pork accounted for most of the increase. The total meat supply per capita in 1949 was estimated at 147 to 150 lb., compared with 146.6 lb. in the previous year and 126-lb. average in 1935–39. Per capita consumption of beef was estimated at 64.1 lb., slightly more than the 63.3 lb. of 1948 but well below the record of 73 lb. consumed in 1945. Veal consumption in 1949 was 8.5 lb., compared with 9.4 lb. in 1948 and 8.1 lb. prewar. Pork consumption per capita for 1949 was estimated at 70.2 lb., compared with 68.7 lb. in 1948 and 79.2 lb. in 1944. The spring pig crop of 1949 was 59,030,000 head, compared with 51,266,000 head a year before, the increase being in line with the record feed supply; the fall crop of 1949 was reported as 37,262,000 head, against 33,921,000 head in 1948; the spring crop of 1950 was forecast at 62,500,000 head, or 6% higher than in 1949.

Lamb and mutton meat production declined to 600,000,000 lb. in 1949, or 4.0 lb. per capita, compared with 753,000,000 lb. in 1948 and an average consumption prewar of about 6.8 lb. per capita. Stock sheep numbers on Jan. 1, 1949, were only 27,818,000 head. Lamb feeding was the smallest in 20 years, primarily because of scarcity of feeder lambs.

At the end of 1949 storage supplies of meat were about 15% less than in 1948.

U.S. exports of meats were small, estimated at 73,000,000 lb. (carcass weight) during 1948–49, compared with 152,000,000 lb. in the preceding year and 1,376,000,000 lb. in 1945–46, lower even than the 123,000,000 lb. average prewar.

Prices of meat animals in 1949 followed divergent trends.

U.S. Meat Production

(In millions of pounds, dressed weight)

	1950*	1949	1948	1947	1946	Average 1937-41
Beef.	9,550	9,580	9,181	10,429	9,373	7,196
Veal.	1,300	1,300	1,419	1,599	1,440	1,022
Lamb and mutton.	570	600	753	802	970	884
Pork.	11,500	10,650	10,246	10,605	11,173	8,573
Total. . . .	22,920	22,130	21,599	23,435	22,956	17,675

*Forecast by U.S. Department of Agriculture.

Hog prices in general declined; levels very near to support levels were reached in the autumn, but purchases of lard for export provided sufficient, although somewhat indirect, support. Prices to farmers ranged between a high of $20.10 per hundredweight in January to a low of $14.80 per hundredweight in December; in general they were more than $7 per hundredweight below the previous year. The best beef cattle reached new high price levels in the late summer but other grades were rather sharply lower, feeder cattle selling at $3 to $7 per hundredweight below the previous year. High-quality beef set new high record prices during 1949, well above $40 per hundredweight. The grand champion steer of the International Live Stock show sold for a record $11.50 per lb. Lamb prices held at high levels during most of the year, reaching a top average to producers of $25.80 per hundredweight in April and in general were not much below the high levels of 1948.

Because of the large number of hogs, the production of lard in 1949 was forecast at 2,850,000,000 lb., as compared with 2,526,000,000 lb. in 1948 and a prewar average of 2,091,000,000 lb. Exports of lard were very large, amounting to 513,200,000 lb. in the period Jan. to Sept. 1949, as compared with 235,100,000 lb. during the same period of 1948. Lard prices for much of the year were below 12 cents per lb., as compared with nearly 20 cents in 1948. Storage stocks in December of 38,285,000 lb. were less than half those of the previous year.

Poultry meat, both chicken and turkey, was produced and consumed in larger amounts in 1949, averaging about 10% more than in 1948, the volume being 164% of the prewar average (1935–39=100), compared with 153% in 1948. Prices were substantially lower and turkey prices were supported by a government purchase program. Storage stocks were at high levels.

Fish were consumed in approximately the same amounts in 1949 as a year before. The supply situation eased, also the price, particularly in regard to some canned types. A record storage level was reached in December with 162,000,000 lb. of frozen fish products, compared with 147,000,000 lb. a year earlier.

World meat supplies increased substantially during 1949, largely because of the improved situation in western Europe. The 400,000 head of cattle usually imported into the U.S. from Mexico were strictly embargoed because of the foot-and-mouth disease in the latter country. (*See* also VETERINARY MEDICINE.) Export of meat from Argentina, Australia, Canada and New Zealand, primarily to the United Kingdom under bulk purchasing agreements, continued on approximately the same level as in 1948. (*See* also FOOD SUPPLY OF THE WORLD; LIVESTOCK.)

(J. K. R.)

Medical Rehabilitation of the Disabled.

The most encouraging developments during 1949 were the creation of additional facilities and programs for rehabilitation, particularly in the field of cerebral palsy, and the broadening of the concept of the responsibility of medicine and society for the total care of the handicapped patient. Most discouraging developments were the continued shortages of trained personnel and the continued increase in the incidence of chronic disease and its resulting physical disability.

As evidence of the growing interest in medical rehabilitation of the disabled as an integral part of medical care, new departments of rehabilitation and physical medicine were created in a number of medical schools and hospitals, and additional hospital residencies leading to specialty certification for physicians in this field were established.

In the United States during the year, the Council on Physical Medicine of the American Medical association was broadened to the Council on Physical Medicine and Rehabilitation; the American Board of Physical Medicine became the American Board of Physical Medicine and Rehabilitation; and a permanent section on physical medicine and rehabilitation was created within the American Medical association. The Baruch Committee on Physical Medicine, largely responsible for accelerated research and graduate training in this field, became the Baruch Committee on Physical Medicine and Rehabilitation.

In addition to new programs in hospitals, the growth of community rehabilitation centres continued. Largely through the efforts of such groups as the British Council for the Welfare of Spastics, the National Society for Crippled Children and Adults, state and local public health and educational agencies and parents' groups, gains were made particularly in the field of cerebral palsy. Although developments were not as rapid in Great Britain, in the United States in 1949 there were more than 200 major centres and programs providing specialized services for the cerebral palsied as compared with an almost total lack of such services a few years before.

Major obstacle to the development of programs of medical rehabilitation of the disabled in 1949 was the shortage of trained personnel. Although the number of physicians trained in physical medicine and rehabilitation increased substantially, there were still far too few available in 1949 to meet the needs of public and private hospitals and rehabilitation facilities. The shortages of physical therapists, occupational therapists and speech therapists were made even more acute by the increased number of programs and the number of therapists needed for emergency work during the poliomyelitis epidemics.

The most fundamental differences in services to the handicapped in Great Britain and the United States during the year was in employment. Under the British system, all persons over 16 yr. of age with a disability constituting a serious handicap to employment and likely to last at least six months could voluntarily place their names on the registry of the disabled in all ministry of labour offices. The registry in 1949 carried nearly 1,000,000 names, with an average net increase from 7,000 to 8,000 names a month. By law, it was required that all businesses employing more than 20 persons select 3% of those employees from this registry. Because of the great manpower shortage in Great Britain, and the ready availability of employment, most employers during 1949 hired far more handicapped persons than the law required, and the quota system was rarely resorted to.

Employment of the handicapped in the United States continued on a voluntary basis, but with a greater acceptance by industry of handicapped workers.

As medical science continued to move forward in the prevention and cure of infectious diseases, the number of chronically disabled and aged persons continued to mount. In the United States, in 1949, the chances were 2 to 3 that a young man starting his working life at 18 would live to his retirement age of 65. White men at the age of 65 could expect to live an additional 12½ yr. on the average, and white women an average of 14¼ yr. With the increase in the incidence of chronic disability resulting primarily from an ageing population, greater demands were made during the year on medical rehabilitation and welfare services. One development holding promise of a more unified approach to the problems of chronic illness in the United States came during 1949 when the Interim Commission n Chronic Illness, founded in 1946 by the American Medical ssociation, American Hospital association, American Public ealth association and American Public Welfare association, ecame the permanently organized Commission on Chronic Illess. The primary objective of this commission was to study e clinical problems (including prevention and research, institional care, noninstitutional care, rehabilitation and commuity problems) in providing better services for the chronically l. Similar developments were under way in Great Britain rough the national health service. (*See* also VOCATIONAL EHABILITATION, OFFICE OF.)

BIBLIOGRAPHY.—Howard A. Rusk and Eugene J. Taylor, *New Hope r the Handicapped* (1949); *Annual Report of the British Council on ehabilitation* (London); British Information Services, *Rehabilitation in reat Britain* (London, 1947); *The Road Back to Health: The Story of edical Rehabilitation* (London, 1947). (H. A. Rk.)

edicine. The most important announcement in the advance of medicine during 1949 was the control of eumatoid arthritis by use of an extract from the adrenal and called Cortisone or an active principle from the pituitary and called ACTH or the adrenocorticotrophic hormone. The tuitary gland develops a hormone that stimulates the adrenal and to action. The cortex or outer portion of the adrenal and elaborates several hormones. E. C. Kendall of the Mayo oundation isolated at least six of these known at first as Comounds A, B, C, D, E and F. Compound E is Cortisone. Evience showed that both Compound E and Compound F miraculusly control the symptoms of arthritis. However, patients ust apparently continue to take the preparation with every tbreak of the condition. Cortisone may be given directly to e patient or he may get ACTH which will stimulate his drenal gland to make the preparation in increased amounts and ut it into the blood. As the year ended, pharmaceutical manucturers and investigators everywhere were trying to prepare ese hormones by synthetic methods. Search was being made r a source of Cortisone which would make possible eliminaon of some of the 37 steps necessary to manufacture the drug hen beginning with bile of beef as the source. Other possible urces suggested were the plant *Strophanthus sarmentosus*, ams and soybean oil. (*See* ARTHRITIS; ENDOCRINOLOGY.) A symposium held late in 1949 indicated possible use of ACTH in controlling rheumatic fever, lupus erythematosus, psoriasis, leukemia and possibly several mental disturbances.

Another important announcement of 1949 was the information that antihistaminic drugs such as benadryl, pyribenzamine, chlor-trimeton and many others could, when used early, avert the common cold or cure it. The food and drug administration permitted public sale of these drugs, including mixtures of antihistaminic drugs with the common ingredients of cold tablets such as aspirin and phenacetin and caffeine as well as mixtures with nose drops and creams. Allergists asserted, however, that at least one-third of the people taking antihistaminic drugs suffered drowsiness and warned against the possible toxic effects of such drugs when used without medical controls or over long periods of time.

A third announcement of 1949 which attracted much attention was the elaboration in Denmark of a drug called Antabuse, technically known as tetraethyl thiuram disulphide, which creates an unpleasant reaction in persons who have previously taken alcohol. Thus the action of the drug was such as to condition the person against drinking.

Dramamine, a combination of an antihistaminic drug with aminophyllin, was hailed not only for its established usefulness in controlling seasickness and airsickness but was also being tried with some success in controlling the nausea of pregnancy and the dizziness associated with Meniere's disease.

Continued work with streptomycin indicated effectiveness in several forms of tuberculosis. Extensive studies made by the Veterans' Administration showed that streptomycin combined with a drug discovered in Sweden called para-amino salicylic acid was more effective in a considerable number of cases than either drug used alone.

Attention continued to be focused on the antibiotic drugs and their usefulness in a variety of conditions. Penicillin continued to be the mainstay against most infections with germs. Antibiotic drugs were being sought in a variety of sources, including fungi, germs such as the *Bacillus subtilis* (which yields bacitracin), also in ragweed, bananas and sweet potatoes.

Aureomycin was found especially effective in Rocky Mountain spotted fever, typhus, atypical pneumonia, undulant fever, syphilis, venereal granuloma, herpes, pemphigus and whooping cough.

Chloromycetin, renamed chloramphenicol, was also found use-

ABORATORY at the Memorial Cancer Center, New York city, where adrenal rmones were synthetically prepared in 1949. These compounds were used medical research to study their influence on tumour growth in cancer paents. This work was one phase of the study of the definition and correction chemical changes that occur in cancer patients

WHOOPING-COUGH PATIENTS, with an attendant nurse, in a portable decompression chamber being used for experimental treatment at Park hospital, London, in 1949. Children were brought gradually to pressure levels prevailing at a height of two and one-half miles and kept there for half an hour

ful in many of these conditions, and was found to be especially valuable in the treatment of infection with the germ of typhoid fever.

Several new drugs were being tried in hypertensive disease, or high blood pressure, with particular interest centred on veratrum viride and dihydroergocornine, which seemed to have the ability to knock out the sympathetic nervous system, thus achieving to a considerable extent the same result accomplished by surgical procedures on the sympathetic nervous system that had attracted interest for some years.

Research with the radioactive isotopes continued. Radioactive iodine became the chief reliance in the control of disturbances affecting the thyroid gland and was being used instead of operative procedures for excessive action of the thyroid, called hyperthyroidism. Radioactive isotopes were also used extensively in studying the physiology of the body and in tracing drugs, vaccines and other preparations injected into the body to determine their chief effectiveness.

Especially interesting in the field of research was the introduction as almost a routine procedure of injection directly into the veins of the local anaesthetic substance called procaine. Procaine was used especially for the control of pain in burns and after operation in a variety of inflammatory conditions. The drug was tested also for producing anaesthesia in childbirth, for frostbite and asthma and in painful cases of infantile paralysis. Procaine given intravenously has the special power of inhibiting action of the sympathetic nervous system. When the drug is given by injection into the vein, there is a sensation of warmth throughout the body five to seven minutes later, also dilatation of the pupils of the eyes and some lightheadedness, followed by relaxation. The drug was also recommended in severe and intolerable itching. Still another use of intravenous procaine was its application to prevent reactions of sensitivity to such drugs as penicillin. A French observer, Leriche, noted its value in the treatment of pain associated with fractures and in severe arthritis as well as in neuralgias of various types.

Among other drugs prominent in the investigative field during 1949 was paradione for the treatment of epilepsy, marphan as a substitute for morphine, and Vitamin B_{12} or Cobione as an effective treatment in pernicious anaemia and in other anaemias. Calciferrol, a highly concentrated vitamin D preparation, was found useful in lupus vulgaris. Two new drugs, parpanit and Artane, were tried for spasmodic conditions and tremors in shaking palsy and similar diseases. In amoebic dysentery a new drug called milibis (bismuth glycolyl arsenilate) was recommended.

Among surgical procedures, greatest interest continued to attach to operations on the blood vessel system, including shunt operations such as those used for the control of blue babies, also an operation for coarctation of the aorta, the largest blood vessel coming from the heart. New devices enabled partial clamping of this great blood vessel during which operative procedures could be carried out.

Other surgical procedures in the research field during 1949 included prefrontal lobotomy by a variety of techniques to change the functions of the brain as a mechanism for the control of depressive and other forms of mental disturbances. Moniz of Lisbon, Port., who devised this procedure, received the Nobel prize in medicine for 1949. The prize was shared with Walter Rudolf Hess for his discoveries of the factors in the nervous system concerned in sleep.

Among new devices which were the focus of attention were electrosonic waves for inducing heat and various changes in the tissues of the body, also the jet injectors for injecting drugs into the body without breaking the skin.

In surgical procedures for removal of portions of the lung, the operation was improved by the use of Lucite balls in a polythene sac to fill the area removed in a surgical operation called thoracoplasty, an operation performed in severe tuberculosis and also in abscess of the lung.

A gallstone detector was devised in the form of a probe which gives off an amplified sound when the probe is passed into the gall ducts and touches a stone.

Research on the causes of disease centred on the observation that poliomyelitis or infantile paralysis is not caused by one virus but by several viruses; the development of a vaccine against the disease would involve determination of the specific form of virus responsible for any individual epidemic. During 1949 the total number of cases in the United States reached more than 43,000, by far the largest number in any one year.

At Notre Dame university, South Bend, Ind., experiments were conducted on cats and chickens with a view to raising animals in an atmosphere entirely free of infective germs. Noteworthy observations included the fact that chickens raised under such conditions developed a form of jitters not occurring under ordinary conditions. The theory was that the absence of germs permits the growth of viruses which are specifically dangerous to the nervous system. Favourable to the circumstances was the absence of dental decay from animals kept under such conditions.

Rehabilitation continued to attract great public and professional interest, and many new devices were developed for this purpose. Operative procedures on the nervous system were investigated with a view to making some progress toward the control of injury to the nervous system. (M. Fi.)

Great Britain.—The first synchrotron in the world to be built and used for medical research was installed in the Royal Cancer hospital, London, under the auspices of the Medical Research council. This 30,000,000 ev instrument produced X-rays of great power and intensity. It differed from conventional X-ray machines which could not effectively be made for potentials above about 1,000,000 ev. This remarkable apparatus was first used for varied biological researches which, *inter alia*, gave data of importance in planning the later application of the machine to the treatment of patients with cancer in those organs where the particular properties of the rays had special advantage.

During World War II great advances were made in the technique of blood transfusion, and its uses were extended. One line of investigation resulted in the standardization of method preparing several fractions of human blood. In Great Britain is brought these fractions within the scope of the Therapeutic ibstances act. Owing to certain difficulties in using blood for ansfusion many possible substitutes were tried. In general ey were unsatisfactory for one or more reasons. For some ne Swedish researchers had been investigating Dextran (a ng chain molecule prepared from sugar) as a blood plasma ibstitute; and some work was published elsewhere which, al-ough critical in some respects, showed that Dextran was an ppreciable step nearer the goal of a blood plasma substitute. the autumn it was made commercially available in Great itain.

Other medical fields in which the year saw great activity were riatrics or the science of the diseases peculiar to old age; ychosomatic medicine which stressed the influence of the ind on the production of physical disease; the epidemiological searches in Great Britain by the ministry of health, the Public ealth Laboratory service and the Medical Research council, rticularly into food poisoning and the common cold; and the ork of the technical commissions of the World Health organ-ition, for example, on the nomenclature of disease (a matter great importance in pathology and medical statistics) and on e unification of pharmacopoeias.

See also Alimentary System, Disorders of; Allergy; An-sthesiology; Atomic Energy; Bacteriology; Biochem-try; Birth Control; Cancer; Chemistry; Chemother-y; Deafness; Dentistry; Dermatology; Ear, Nose and hroat, Diseases of; Endocrinology; Epidemics; Eye, Dis-ses of; Gynaecology and Obstetrics; Heart and Heart iseases; Hospitals; Industrial Health; Infantile Paral-is; Medical Rehabilitation of the Disabled; Narcotics d Narcotic Traffic; Nervous System; Nutrition, Ex-rimental; Physiology; Plague, Bubonic and Pneumonic; neumonia; Psychiatry; Psychosomatic Medicine; Public ealth Engineering; Public Health Services; Surgery; uberculosis; Venereal Diseases; Veterinary Medicine; tamins; X-Ray and Radiology.)

Films of 1949.—*There Were Two Doctors* (Simmel-Meservey).
(W. P. K.)

ental Health: *see* Nervous System; Psychiatry; Psy-iology; Psychosomatic Medicine.

enzies, Robert Gordon

(1894–), Australian prime minister, was born at Jeparit, ctoria, Dec. 20. He was educated in the state schools of Vic-ria, at Grenville college, Ballarat, and at Wesley college, Mel-urne. In May 1918 he was called to the Victorian bar and gh court of Australia, and 11 years later became a K.C. In 28 he was elected to the Victoria legislative council and in e following year to the Victoria legislative assembly. He was nister without portfolio, 1928–29, and attorney general, min-er for railways, and deputy prime minister of Victoria, 1932–. In the latter year he was elected to the federal house of presentatives for Kooyong, and from 1935 to 1939 was at-rney general and minister for industry. He resigned in March 39, but retained the portfolio of co-ordination of defense. ter the death of J. A. Lyons on April 7, 1939, Sir Earle Page s prime minister until April 26, when he was succeeded by enzies who had been elected leader of the United Australia ater Liberal) party. He resigned on Aug. 29, 1941, after the bour party had refused to join a coalition government. enzies remained as minister for co-ordination of defense until e fall of the Fadden ministry on Oct. 7, 1941. From 1943 he s leader of the federal opposition in the house of representa-ves. The general election of Dec. 10, 1949, resulted in a defeat for the Labour government led by J. B. Chifley, and Menzies was sworn in on Dec. 19 as the head of a coalition of the Liberal and Country parties.

Merchant Marine: *see* Shipping, Merchant Marine.
Mercury: *see* Mineral and Metal Production and Prices.
Mesotrons (Mesons): *see* Physics.

Mesta, Perle (Skirvin)

(Mrs. George Mesta) (1891–), U.S. diplomatic official, was born in New York city. Her father, William B. Skirvin, later made a fortune in oil and real estate in the southwest. She was educated in private schools in Galveston, Tex., studied voice and the piano, and married George Mesta of Pittsburgh, Pa., a machine-tool manufacturer. During World War I she directed the Washington Stage Door Canteen and acquired an introduction to Washington society. She travelled abroad extensively with her husband before his death in 1925, and later gained a reputation as a skilful hostess both in Washington and at Newport, R.I. In the mid-1930s she became a member of the National Woman's party, and her introduction to politics came during her lobbying for the equal rights amendment before congress. Before 1941 she entertained and campaigned largely for the Republicans, but with the defeat of Wendell L. Willkie, whom she had favoured, she transferred allegiance to the Democrats. She worked for the Democrats in the 1944 campaign, in 1946 was hostess for the coming-out party of Margaret Truman, President Truman's daughter, and in 1948 and 1949 was co-chairman of the Democratic Jefferson-Jackson day dinners. She was appointed minister to Luxembourg in July 1949.

Metallurgy.

A few of the more important developments in the field of process metallurgy during 1949 are summarized in the following paragraphs.

Aluminum.—Steel sheets coated with aluminum were produced by hot-rolling two sheets of aluminum foil to the surfaces of a steel strip, after passing the strip through a cleaner bath and an electrolytic cell which plated on the surface of the steel a thin layer of electrolytic iron.

Cobalt.—A new plant was completed in the United States for the treatment of cobalt ores, and a new smelter was nearing completion in Canada, to handle cobalt-silver-arsenic ores from the cobalt district. The latter plant was expected to work new ores and to rework old tailing piles from which incomplete recoveries were made.

Gallium.—Gallium was being produced and sold in small quantities, after recovery as a by-product in the treatment of bauxite ores.

Magnesium.—New applications for magnesium included light-weight components in textile looms.

Titanium.—Marked advances were made in methods for the production of pure titanium metal, and extensive research was under way on possible commercial applications.

Substitutions.—Shortage of steel during 1949 resulted in considerable substitution by aluminum, especially in sheets, strips and bars. This substitution might have gone further, had the aluminum supply been more plentiful. In containers for repeated use, such as milk cans, tin plated steel was being replaced by stainless steel, for greater strength, lighter weight, freedom from corrosion and upkeep and a useful life that was expected to be from two to four times longer.

Probably the heaviest trend in substitution was in the replacement of metals by plastics. This movement was advancing rapidly and extensively, not only in toys and gadgets, but also in industrial equipment such as gears and other machine parts. The U.S. army was reported to be testing a plastic pipe, for possible use in combat oil lines. High cost was offset by light weight and ease of handling and laying, aside from the factor of saving in consumption of steel.

Welding and Soldering.—Difficulties in soldering on a metal surface plated with passivated zinc, such as a radio chassis, were overcome by devising a special technique of resistance welding. An indium-base solder was also developed which made possible the sealing of glass to glass or glass to metal. (G. A. Ro.)

Metal Prices and Production: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Meteorology.

The outstanding events in meteorology and the principal results of research during the year 1949 can be grouped conveniently under the subheadings experimental meteorology, synoptic meteorology, applied meteorology, theoretical meteorology and research, international co-operation and weather of 1949.

Experimental Meteorology.—If weather as it occurs in the atmosphere could be duplicated in the laboratory many basic questions in meteorology could be quickly answered. Experimental methods that have given revolutionary results in other physical sciences have had only limited use in meteorology although there have been repeated efforts to find a laboratory approach to the secrets of the atmosphere. Renewed attacks in experimental meteorology were reported in 1948 and the approach gained ground during 1949. As in other sciences there were certain problems in meteorology that could be isolated and analyzed step by step in the laboratory and eventually broken down into their components.

Work in experimental meteorology approached laboratory techniques in two ways: one made use of radar, rocket, rawinsonde, artificial modification of clouds and other free-air experiments in an effort to make the atmosphere itself the meteorological laboratory; the other involved a more concerted effort to devise conventional laboratory techniques for simulating if not duplicating free-air conditions.

Among the latter were the laboratory studies of the rates of fall and rates of evaporation of water droplets and a new determination experimentally of the terminal velocities of falling raindrops. This research also gave new and more exact measurements of the electrical charges on falling raindrops. Other studies repeated measurements of the size and distribution of cloud droplets and their behaviour in an electrical field. Another interesting research project was a refinement of earlier attempts to simulate the circulation of a fluid on a rotating globe with opposing currents set up by applying heat at one place. The apparatus was designed to duplicate the general features of the circulation of the atmosphere about a polar hemisphere and to study the flow along the boundaries of opposing currents. These laboratory studies, although not yet conclusive, were aimed at determining quantities fundamental to full understanding of the general circulation of the atmosphere, the formation of fronts and cyclones and the condensation and coalescence of moisture into precipitation.

The results of these and other experiments were published in the *Journal of Meteorology* and the *Bulletin* of the American Meteorological society.

Research that used the atmosphere itself as the laboratory was greater in scope and diversification than meteorological research in the usual laboratory sense. Experiments in the modification of clouds, the conversion of subcooled cloud droplets into ice crystals and the precipitation of rain and snow from shower-type clouds were carried on more systematically and with more thorough scientific examination of the results during 1949 than in the preceding year. Methods were essentially the same, although refinements in techniques were reported. The chemical agents most commonly used in treatment of shower clouds from aircraft flying above or through the cloud were dry ice and silver iodide. In experiments designed to diffuse condensation nuclei into the cloud from generators on the ground silver iodide was most used.

Unfortunately, scientists disagreed about the results. Project "Cirrus," financed by the office of naval research and the signal corps of the army, reported success in causing rain to fall from shower-type clouds in southwestern United States, but the cloud physics project of the air force and the weather bureau, in extensive tests in Alabama, California and Ohio designed to investigate aspects of the subject not duplicated by Project "Cirrus," found little evidence that artificial means had been successful in increasing rainfall sufficiently to be of commercial value except possibly under very exceptional circumstances. In Canada under the National Research council field tests were reported in which seeding clouds with dry ice had caused rain in considerable quantities.

Although professional rain makers of the past had claimed power to bring rain clouds even though skies were clear, no reputable rain maker in 1949 claimed more than a means of inducing or increasing the fall of rain from clouds formed by natural causes. Artificial methods were not applied except when weather conditions were such that cumulus clouds were already present. Showers as distinguished from steady, light rain come from cumulus clouds. Thus the rain maker usually went to work when the weather was favourable for development of showers without artificial aid and it was difficult to determine whether the cloud treated with dry ice or silver iodide gave rain as result of the treatment or would have developed the same entirely from natural causes. It was well known that the moisture necessary for heavy rainfall comes from vast quantities of humid air brought into the shower cloud or the cyclonic system, in the case of widespread rain, by comparatively large scale inflow of air from other regions, sometimes far distant. However rain is not merely the moisture precipitated from the visible droplets and the invisible water vapour within the cloud itself as it first appears. Since rain makers do not usually claim to set in motion by artificial means the large scale circulation necessary for heavy rainfall except as a possible consequence of the initial rain which they do claim to produce, meteorologists pointed out that artificial rain making had not yet shown conclusive evidence or made a scientific case for its claims. In their experiments rain makers usually selected for their tests those clouds which appeared most promising as shower producers and naturally these were the clouds that were most likely to give showers without artificial aid. Meteorologists also pointed out that few commercial rain making operations had been accompanied by comprehensive and impartial observations of results and by documentation of unsuccessful as well as successful attempts. It appeared to be the consensus of scientists familiar with the subject that the quantity of rain might be increased locally by artificial means under certain relatively infrequent circumstances when naturally formed clouds were near the shower stage and air currents in the region were favourable for shower development, but in no case had there been reason to believe that artificial rain making was a solution for widespread drought when atmospheric conditions were unfavourable for rain. It was estimated that it would be much less expensive to bring water to a drought stricken region by tank car or pipeline than to create artificially the vast cyclonic circulation necessary to produce rain in the way that nature gives it. However intensive research in this important but controversial subject was being continued.

Experimental meteorology during 1949 also announced new ltitude records for high level sounding balloons. In Project Skyhook" the office of naval research reported soundings at ltitudes slightly over 100,000 ft. while the army signal corps ublished the results of one sounding in which the balloon was omputed to have reached 140,000 ft., the highest altitude ever ecorded by sounding balloon. The navy balloons are fabricated rom very thin polyethylene sheets only .001 in. in thickness. Unlike rubber sounding balloons, they do not expand much as hey ascend. Their maximum size inflated is approximately 100 t. in vertical diameter and 70 ft. in horizontal. When they each their equilibrium altitude they can remain at constant evel for many hours, and by suitable design in size, weight and other characteristics it is possible to manufacture balloons for any desired intermediate altitude within rather rough limits. This constant altitude balloon provided a new device for exploring the atmosphere especially with reference to wind flow for long distances at high altitudes.

The signal corps high level balloons are made of neoprene atex. At maximum altitude their size is about 75 ft. in diameter. Their lifting capacity is not as great as that of the larger navy balloons. In addition to their measurements of atmospheric pressure and temperature and their evidence of wind discontinuities not heretofore suspected in the upper air, these balloons were used for other physical research in ozone distribution, onization and cosmic radiation. Too costly for everyday soundngs, these high level balloons were still in experimental stages and first results could not be taken as conclusive.

Among other developments during the year in experimental meteorology were practical studies in the use of radar for identification of thunderstorms and possibly tornadoes; also research in the possibilities of radar to estimate the quantity of rainfall over an area of several hundred square miles to afford better measurements of regional precipitation than was possible with the spot sampling commonly obtained by use of standard rain gauges. Although individual studies in the use of seismographs and "sferics" recorders to detect the development and movements of hurricanes far at sea were continued as reported in the past year or two, there were no outstanding achievements in these methods during 1949. Meteorological literature for the year contained many articles on new instruments and projects in experimental meteorology but none other than those described in foregoing paragraphs appeared to have reached a point where they were of general interest.

Synoptic Meteorology.—During 1949 the principal weather forecasting centres in the United States received synoptic messages every six hours reporting the weather at about 700 places in the northern hemisphere, and in addition many of these centres received several hundred reports each hour, more than 10,000 each day, from airport weather stations conveying meteorological items of importance in air navigation. Yet these voluminous reports presented only a small part of the picture of local conditions and variations in weather of significance to agriculture, commerce and transportation, especially air and sea transportation. There was constant demand from business concerns and the general public for more comprehensive coverage by the

U.S. COAST GUARDSMEN on ocean weather duty in the North Atlantic, chopping at dangerous ice crusts that made the vessel top-heavy

Table I.—*Monthly and Annual Mean Temperature and Departure in °F in U.S. Cities*

Cities, 1949	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year	Annual dep.*
Albuquerque, N.M.	30	37	48	56	65	74	78	76	72	56	51	34	57	+2
Atlanta, Ga.	52	52	53	60	72	76	80	78	71	67	51	46	63	−1
Boston, Mass.	35	34	40	51	60	72	76	76	63	59	44	37	54	+5
Brownsville, Tex.	66	66	70	73	83	84	84	84	82	77	69	63	75	+1
Buffalo, N.Y.	31	32	34	46	52	72	74	72	59	57	38	33	50	+2
Charleston, S.C.	59	59	58	64	73	70	80	80	74	70	54	52	67	+1
Chicago, Ill.	28	28	37	48	62	74	78	75	60	57	40	32	52	+2
Columbus, O.	37	37	41	49	63	75	78	74	61	60	49	35	56	+4
Denver, Colo.	19	34	40	51	58	66	74	71	64	50	51	35	51	+2
Des Moines, Ia.	19	21	36	51	65	75	77	74	61	57	43	28	51	+3
Duluth, Minn.	14	11	24	44	50	62	70	67	55	47	33	15	41	+2
El Paso, Tex.	36	48	59	68	73	81	82	80	75	63	56	44	64	+2
Miami, Fla.	71	73	70	75	77	80	81	81	81	79	69	71	76	+1
Nashville, Tenn.	47	45	50	57	70	77	81	77	68	64	48	43	61	+2
New Orleans, La.	61	63	62	68	78	82	83	83	79	76	62	59	71	+2
Portland, Ore.	28	39	46	52	59	62	67	66	63	51	48	42	52	0
Phoenix, Ariz.	45	55	60	72	77	86	91	86	87	70	66	53	71	0
Salt Lake City, Utah.	12	23	42	54	60	67	77	76	67	48	44	30	50	−2
San Diego, Calif.	48	53	56	61	63	67	69	70	70	64	65	55	62	0
Spokane, Wash.	8	26	38	49	59	62	68	69	62	44	41	28	46	+1
St. Louis, Mo.	33	37	44	54	69	78	81	78	66	59	49	41	57	0
Washington, D.C.	43	44	47	55	66	75	81	78	67	63	48	42	59	+2

*Difference between the average temperature for the year 1949 and the normal average annual temperature.

Table II.—*Monthly and Annual Rainfall and Departure from Normal, in inches, in U.S. Cities*

Cities, 1949	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total 1949	Annual dep.*
Albuquerque, N.M.	0.8	0.5	0.7	0.6	1.3	0.4	2.5	0.7	0.8	0.1	0	0.4	8.8	+0.6
Atlanta, Ga.	4.7	3.9	4.3	7.1	2.0	4.7	2.8	6.3	2.7	3.1	0.8	2.6	45.0	−2.5
Boston, Mass.	3.1	3.0	1.7	3.1	2.4	0.9	1.2	2.3	6.4	1.6	3.5	1.6	30.7	−8.2
Brownsville, Tex.	2.7	3.1	0.4	1.6	2.0	1.7	5.4	4.3	7.5	0.4	T	2.0	31.1	+4.5
Buffalo, N.Y.	2.8	2.7	2.5	2.4	2.1	1.1	3.2	5.1	3.1	1.6	6.3	3.5	36.4	+3.6
Charleston, S.C.	0.8	2.4	2.6	2.3	6.2	6.3	5.1	13.0	6.7	2.0	2.1	0.7	50.2	+4.7
Chicago, Ill.	3.1	2.4	3.0	2.1	2.5	3.4	5.0	1.3	1.2	2.9	0.3	6.7	33.9	+1.0
Columbus, O.	6.7	3.2	3.8	2.8	2.3	7.5	3.5	3.9	3.1	1.6	1.5	2.9	42.8	+8.7
Denver, Colo.	0.9	T	2.5	1.2	2.8	3.9	2.0	0.4	0.1	0.8	T	0.2	14.8	+0.7
Des Moines, Ia.	2.7	0.6	2.4	1.1	1.2	5.9	3.1	1.6	2.0	1.7	0.3	0.8	23.2	−7.5
Duluth, Minn.	1.6	0.3	2.1	0.7	4.3	2.8	7.5	2.1	2.0	5.5	1.2	0.2	30.3	+3.8
El Paso, Tex.	2.1	0.2	T	0.1	0.3	0.4	1.2	0.4	1.7	1.6	T	0.8	8.8	+0.2
Miami, Fla.	3.1	0.4	2.8	4.3	5.1	7.1	5.2	5.4	10.6	7.5	1.2	3.5	55.2	−2.6
Nashville, Tenn.	7.1	2.8	5.5	5.1	5.5	7.2	4.4	2.6	0.7	4.3	0.5	5.5	51.2	+6.4
New Orleans, La.	3.1	4.7	11.8	9.4	0.4	5.9	6.7	5.6	7.1	3.5	0.1	5.4	64.7	+5.0
Phoenix, Ariz.	1.7	T	0.4	0.3	0.2	0.1	0.4	0.5	0.8	0.9	0.3	0.4	6.0	−1.6
Portland, Ore.	1.2	11.4	3.1	0.8	2.8	0.3	0.9	0.1	1.1	2.9	6.4	5.1	36.1	−4.5
Salt Lake City, Utah.	2.5	0.6	2.8	1.3	2.6	0.2	0.5	0.7	0.9	2.8	0.7	1.7	17.3	+1.5
San Diego, Calif.	3.5	2.0	0.8	T	0.4	T	T	T	T	0.2	1.2	0.4	8.5	−1.6
Spokane, Wash.	0.4	3.1	2.1	0.5	0.8	0.2	0.1	0.2	1.3	1.5	2.4	1.6	14.2	−0.4
St. Louis, Mo.	7.5	2.3	2.4	0.8	2.8	2.3	10.3	2.1	4.7	6.3	0.2	3.9	45.6	+8.9
Washington, D.C.	5.1	2.5	3.1	2.0	6.3	2.4	4.3	4.2	3.5	3.1	0.7	2.1	39.3	−1.0

T denotes a trace of precipitation, less than 0.01 in.
*1949 excess or deficiency from normal rainfall.

Table III.—*Duration of Sunshine, in Hours, in U.S. Cities*

Cities, 1949	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total 1949	Annual dep.*
Albuquerque, N.M.	164	207	285	307	344	339	330	342	284	284	269	230	3385	− 16
Atlanta, Ga.	112	137	215	215	286	206	200	180	244	152	224	136	2308	−302
Boston, Mass.	111	169	227	254	284	387	300	306	233	233	146	167	2817	+ 96
Buffalo, N.Y.	49	137	198	262	328	393	355	340	195	204	54	99	2614	− 71
Charleston, S.C.	191	179	279	276	330	262	316	272	225	214	245	188	2977	+ 46
Chicago, Ill.	105	142	215	287	301	318	281	297	242	223	131	134	2675	+ 28
Denver, Colo.	111	169	227	254	284	387	300	306	233	233	146	167	2817	+ 96
Duluth, Minn.	110	151	215	297	282	289	278	313	204	137	104	98	2477	−124
El Paso, Tex.	154	250	317	308	396	369	309	317	261	273	292	236	3487	+137
Miami, Fla.	287	268	305	305	341	260	300	306	288	274	217	176	3322	+391
Nashville, Tenn.	54	135	185	188	312	242	261	188	258	131	201	123	2279	−371
New Orleans, La.	203	84	235	251	349	271	209	222	179	143	275	145	2566	−184
New York, N.Y.	133	168	214	252	254	324	263	260	230	165	167	164	2592	− 52
Phoenix, Ariz.	187	250	327	353	414	386	359	392	315	289	273	249	3794	+144
Portland, Ore.	147	95	116	203	239	291	277	241	205	116	126	86	2141	− 6
Salt Lake City, Utah	176	168	191	319	318	378	402	373	304	207	236	116	3187	+237
San Diego, Calif.	162	180	285	207	240	259	263	287	249	252	248	225	2856	+ 6
San Francisco, Calif.	221	126	184	286	273	315	289	248	231	260	204	191	2829	− 88
St. Louis, Mo.	79	158	178	261	331	253	161	276	240	181	240	163	2520	−120
Washington, D.C.	100	155	223	206	269	271	266	256	241	164	161	167	2479	−217

*Difference between the total number of hours of sunshine during 1949 and the normal average total.

government meteorological service, and as aviation expanded there was urgent need for more and more reports of weather elements aloft with their endless changes. Surface weather observations were augmented by upper-air soundings with pilot balloons and radiosondes, by aircraft reconnaissance reports and more recently by hundreds of in-flight weather reports from commercial pilots who on their regular air transport routes encountered local storms, icing clouds and air turbulence that would otherwise not be reported for entry on the daily weather charts from which forecasts and storm warnings were prepared. The great number of incoming reports arriving in a continuous stream flooded the primitive facilities of the weather map analyst and forecaster and forced evolution toward fewer and larger analysis centres with facilities for mechanical processing of data and transmission of completely analyzed maps by facsimile to remote district and local forecasting offices. This evolutionary trend was still in progress by the close of 1949 and the practice of central analysis could not be completely adopted until communications facilities were available and other technical problems solved, but by the end of the year the use of upper-air charts and prognostics prepared by the central analysis unit in Washington, D.C., had become general throughout the United States. With further increase in pilots' reports and upper-air soundings it was obvious that greater use of centrally processed weather maps was inevitable.

The flood of weather reports led to other steps. It was impossible for the individual forecaster to assimilate and interpret mentally the innumerable items of meteorological data required to determine or define the state of the atmosphere over the country, the continent and the globe. Nevertheless this over-all analysis was important for air navigation, for long-range weather forecasting and for estimates of agricultural production and other business analyses and activities. Although progress was not great, there was some improvement during 1949 in use of machine tabulation methods and electronic computer apparatus for rapid processing of synoptic weather data. Meteorologists hoped these developments would eventually simplify the concepts and practices of theoretical and applied meteorology.

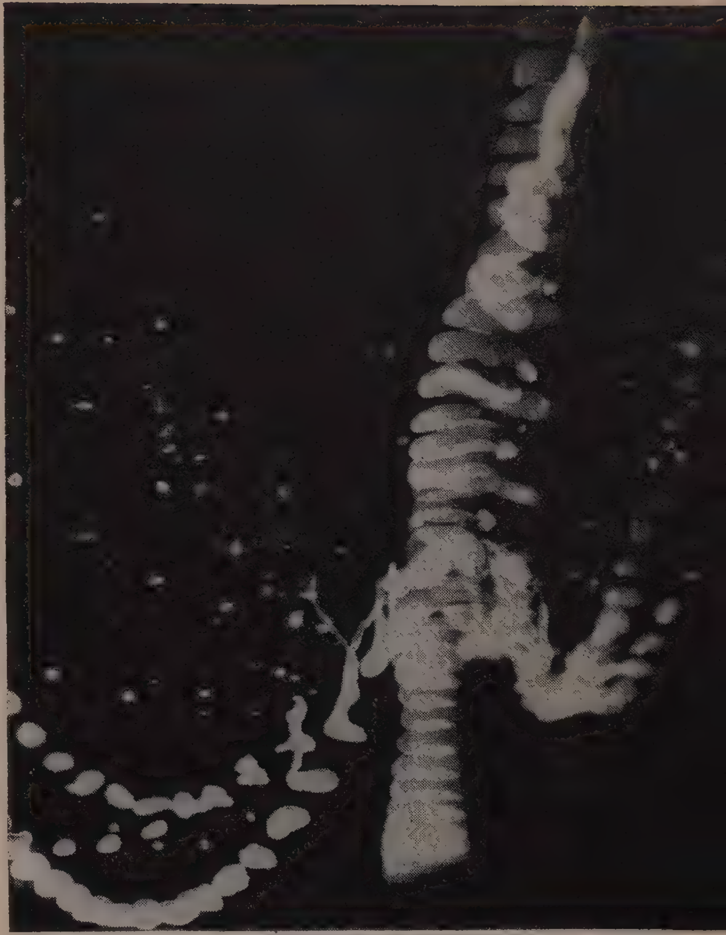
In an effort to reduce the number of spot reports required to represent the state of the atmosphere, one investigator proposed an entirely new concept of synoptic presentation, a system that would show the virtual parameters of the weather for an area rather than a point. This concept was too great a departure from customary synoptic practices and the elements it represents were too intangible for immediate acceptance by weather forecasters, but it constituted a form of solution to a pressing problem and was noteworthy as a precursor to future trends.

Surprised in recent years by evidence of distinct wind streams in the upper air, occasionally with velocities of 200 m.p.h. or more, called jet streams, and interested in the relation of these streams to the general circulation and their bearing on operation of high altitude aircraft and missiles, synoptic meteorologists during 1949 brought out new theories on the connection between fronts in the troposphere and jet streams in the stratosphere. Preliminary observations of the occurrence of these high velocity wind streams in the southern hemisphere were presented with theoretical reasons for believing the phenomenon to be less frequent and less intense than in the northern hemisphere. Direct observations urgently needed to delineate the extent and nature of jet streams five or ten miles above the ground probably depended upon wider and more frequent soundings with the constant level, high altitude balloons already described. It was formerly theorized that winds in the stratosphere were relatively constant and formed a fairly simple general global circulation, but later it was calculated that the velocities in jet streams occasionally reached 300 m.p.h. However most meteorologists, pointing to the rarified state of the atmosphere at high altitudes, believed the air and winds there had insufficient weight and driving force to exert much influence on weather in the lower troposphere near the ground. This view did not overlook the fact that the composition of the high atmosphere as regards ozone content and ionization does affect the radiation balance and other phenomena in ways that may profoundly influence the general temperature, wind circulation and storminess near the earth's surface.

Synoptic meteorologists were giving more attention to pragmatism in weather forecasting. During 1949 there were many studies and some progress in developing more objective methods for forecasting the weather locally, that is, methods based on substantive factors and engineering techniques rather than upon subjective prognostics and expert opinion alone. The oft-tried and discarded use of relative probabilities or prognostic confidence factors had further study as an aid to the businessman in calculating his weather risks. Forecasts of river stages and floods and of seasonal water supply in western states where snow accumulation in the mountains is an important source of water for irrigation in the summer growing season had been improved in recent years and were especially valuable during 1949. The close relationship of rain or snow and temperature to rainfall runoff, floods and water supply involve good co-ordination in hydrometeorological factors when these conditions are to be predicted.

The daily synoptic reports and upper-air soundings in the arctic and over the oceans, which were noteworthy new achievements within the last few years, had become routine operations in 1949. Throughout the year weather reconnaissance flights to the north pole were made by U.S. air force planes operating from Alaska, and during the hurricane season similar flights were made over tropical waters. Weather reconnaissance flights and radar observations contributed much toward keeping the hurricane warning service of the weather bureau at a high level of accuracy. For reasons of economy the nations participating in the ocean weather vessel patrol in the North Atlantic agreed to reduce the number of station vessels to 11 and for similar reasons the United States reduced the number in the Pacific to 3. Television, an excellent medium for meteorological services in which map display is important, came into wider use as a means of picturing for the general public the march of the weather from day to day. With public interest in weather bureau services still growing and in contrast thereto an increasing demand for reduction in government expenditures, it was logical to encourage more use of radio and television broadcasting channels for disseminating weather forecasts and warnings to the general public and to direct attention to the industrial or consulting meteorologist as the channel for private or individual meteorological services.

Applied Meteorology.—After World War II meteorologists redoubled their efforts to encourage and develop the practical applications of weather science and its services in the everyday operations of business and industry and the thousands of enterprises where weather and climate are important factors. During 1949 the American Meteorological society gave special attention to opportunities in applied meteorology. New in this field was the professional directory published in its monthly *Bulletin* announcing the services offered by various consultant firms in meteorology in several parts of the United States.



STROBOSCOPIC PHOTO of a falling raindrop, showing that raindrops are not tear-shaped but assume changing forms as they drop. The picture was taken as part of a joint cloud study program of the U.S. army signal corps, the office of naval research and the General Electric research laboratory at Schenectady, N.Y.

Also contributing to diffusion of weather knowledge and its practical application by the general public were the new organization called the Amateur Weathermen of America and its bimonthly periodical *Weatherwise.* The Amateur Weathermen of America sought to reach meteorological readers of all ages and interests, and in co-operation with Science Service, Washington, and the Science Clubs of America encouraged young men and women in secondary schools throughout the country to cultivate the observing of weather as a hobby or as co-operative members of the voluntary climatological service. Through articles published on its daily weather maps and through personal associations in its field offices the weather bureau continued to encourage business and industry to make better use of applied meteorology and to avail themselves of the services of professional consultants in this field.

Noteworthy was the work of the Laboratory of Applied Climatology of Johns Hopkins university, Baltimore, Md., where research in the meteorological factors relating to crop development and harvesting led to improved quality of product, better scheduling of harvest and reduced labour costs. Although in years past agriculture experiment stations of state and federal governments and agricultural colleges had worked extensively on relationship between weather and climate and crops, the work of the Laboratory of Applied Climatology was outstanding as an instance in which an industrial concern made such broad use of a scientific consultant service in meteorology.

Table IV.—*Monthly Mean Temperature in °F. in Cities of the World*

Cities	1949 Jan.	Feb.	March	April	May	June	1948 July	Aug.	Sept.	Oct.	Nov.	Dec.
London	42.7	42.5	42.3	52.3	53.7	61.8	62.7	61.5	59.0	51.3	45.6	44.1
Edinburgh	41.1	41.7	39.9	47.8	50.7	55.3	57.7	55.5	54.1	48.4	45.5	42.3
Hamburg	37.6	38.7	37.6	50.5	54.9	58.1	63.7	63.0	58.6	49.3	41.9	37.2
Stockholm	32.9	34.5	32.2	42.3	54.5	56.1	64.9	60.6	54.3	43.2	35.1	36.9
Brussels	40.1	40.8	40.1	53.1	53.6	59.0	62.4	63.3	59.5	51.1	44.1	39.4
Lisbon	55.5	56.9	58.5	64.8	62.7	69.8	70.8	71.5	71.0	67.5	63.4	58.3
Malta	54.3	53.5	52.9	60.8	66.3	72.7	74.1	77.9	73.7	71.9	61.7	56.6
Cairo	55.5	54.3	62.1	64.2	80.4	81.3	82.9	82.6	78.6	73.9	66.4	57.0
Baghdad	46.7	49.5	57.5	66.3	83.4	91.5	95.9	95.2	85.3	73.3	60.1	48.7
Aden	76.5	77.3	79.9	81.5	87.7	90.5	90.0	88.9	89.1	85.3	79.5	77.3
Salisbury	71.3	68.3	67.9	66.5	62.0	56.5	57.5	59.3	65.5	70.6	69.7	71.0
Capetown	71.0	72.5	71.1	63.5	60.1	60.2	54.3	55.7	56.7	61.9	—	68.2
Colombo (Ceylon)	79.5	79.0	81.3	80.9	81.9	81.1	81.2	80.9	81.4	80.3	79.9	79.1
Toronto	29.1	29.3	32.5	45.9	58.1	72.1	71.3	70.9	65.8	48.7	45.3	31.5
Winnipeg	1.9	6.1	15.8	42.7	52.9	63.4	68.1	67.7	62.1	46.8	25.9	6.1
Victoria, B.C.	30.9	35.9	42.9	47.1	54.7	57.1	60.2	59.0	55.7	48.8	42.2	35.8
Hobart	59.1	56.9	58.0	52.5	49.8	45.1	45.5	49.3	52.5	51.1	54.8	59.5
Wellington, N.Z.	59.4	63.5	58.3	53.5	51.7	48.1	48.0	48.3	51.9	52.3	55.2	60.2
New York	39.0	38.9	42.4	53.3	62.3	72.6	75.6	74.8	69.3	55.9	52.4	38.8
Washington, D. C.	43.4	44.6	47.2	55.4	66.4	75.8	78.4	76.0	69.7	56.2	52.2	40.6
San Francisco	42.0	48.3	53.2	55.6	56.7	58.8	59.3	59.6	60.0	60.4	56.6	47.8

Table V.—*Monthly Rainfall, in Inches, in Cities of the World*

Cities	1949 Jan.	Feb.	March	April	May	June	1948 July	Aug.	Sept.	Oct.	Nov.	Dec.
London	1.20	0.88	0.92	1.46	2.30	0.50	1.19	2.87	1.24	1.83	1.59	2.02
Edinburgh	2.16	1.67	0.80	1.07	1.90	1.01	1.94	9.40	2.58	1.61	2.33	2.20
Hamburg	1.42	1.77	1.81	4.88	3.27	3.70	5.24	6.26	2.56	1.65	0.91	0.79
Stockholm	1.41	0.36	0.52	1.30	1.19	2.10	3.81	4.09	1.53	1.06	0.86	0.87
Brussels	1.09	0.80	1.84	1.88	2.12	0.87	5.12	2.27	1.57	1.75	1.75	2.49
Lisbon	1.58	0.70	1.74	1.49	0.41	0.49	0.00	0.08	0.03	1.99	0.37	7.66
Malta	2.28	2.50	1.71	0.16	0.52	0.04	0.03	0.00	0.05	5.96	5.56	7.42
Cairo	0.28	0.07	0.00	0.02	0.01	0.00	0.00	0.00	0.00	T	0.04	0.17
Baghdad	0.11	0.13	3.27	0.29	0.13	—	0.00	0.00	0.00	0.00	0.10	0.88
Aden	0.55	0.18	T	T	0.03	0.00	T	0.02	T	0.26	0.02	0.42
Salisbury	6.02	4.75	1.95	0.46	0.90	0.00	0.02	0.00	0.00	1.85	5.47	2.23
Capetown	6.02	0.20	0.23	2.49	1.63	2.57	5.24	2.00	2.68	1.60	0.31	0.62
Colombo (Ceylon)	1.50	0.14	6.08	22.98	12.62	12.46	2.70	6.60	2.18	8.97	12.32	5.22
Toronto	3.33	2.83	2.17	1.15	0.41	0.06	1.31	0.89	2.22	2.63	3.30	2.12
Winnipeg	2.04	1.07	0.69	0.08	1.71	2.71	4.06	0.94	0.05	0.39	1.28	1.63
Victoria, B.C.	0.89	6.86	2.22	1.41	0.71	1.15	1.40	2.58	1.81	1.87	7.70	6.30
Hobart	4.20	1.14	1.14	1.06	2.40	1.06	1.29	0.77	2.80	4.11	2.50	1.84
Wellington, N.Z.	2.25	1.29	2.54	4.85	3.19	5.83	7.41	2.28	1.37	4.43	4.27	1.41
New York	5.5	3.1	2.1	3.9	3.8	0.2	7.52	3.21	1.13	2.44	3.33	6.52
Washington, D.C.	5.1	2.5	3.1	2.0	6.3	2.4	3.60	8.00	3.63	3.11	5.78	4.93
San Francisco	1.2	3.2	5.8	T	0.7	T	0.02	0.02	0.09	0.20	1.18	4.75

T denotes trace of precipitation, less than 0.01 inch.

In the building industry a preview of the applications of modern meteorology and climatology to design, construction and location of industrial and residential structures was shown through co-operation of the American Institute of Architects and one of the popular periodicals on home design and beautification. The publication aroused widespread interest and heralded closer co-operation in research for better utilization of natural resources in weather and climate for planning and selecting the best site for the particular industrial or residential purpose and for other uses such as revision of building codes and formulation of better maintenance practices to meet the diverse effects of different kinds of weather and climate.

The problem of control of air pollution focused attention on micrometeorology, especially in localities like Donora, Pa., where in Oct. 1948 local weather conditions led to concentration of factory effluents which caused many personal casualties. In Nov. 1949 the public health service published a comprehensive report of studies completed in co-operation with the weather bureau and other investigating groups. The results were of interest to all cities and industrial communities that had an air pollution nuisance. Although the Donora study had to do primarily with local meteorology rather than micrometeorology in the strict sense, it was illustrative of the attention being given to investigations into the small scale or local details of weather and climate. Studies like this brought greater appreciation of the significant local differences caused by hills, valleys, bodies of water and other features of terrain and topography that modify weather and climate.

The year saw other activities new in applied meteorology. An example was specialization in local forecasting of sea swells and hurricane winds dangerous to personnel engaged in oil drilling operations off the coasts of Louisiana and Texas. In applied climatology and microclimatology as well as in applied meteorology, scientists spoke optimistically of the possibilities and need for specialization in the work of these meteorological fields.

Theoretical Meteorology and Research.—Most technical papers contributing to knowledge in theoretical meteorology during 1949 were published in the *Journal of Meteorology* of the American Meteorological society, the *Quarterly Journal* of the Royal Meteorological society or *Tellus*, a quarterly which first appeared in March 1949 as a publication of the Swedish Geophysical society and the University of Stockholm. Other important research results on subjects of a less theoretical nature were published in the *Bulletin* of the American Meteorological society, the *Meteorological Magazine*, London, and the *Transactions* of the American Geophysical union. A number of the longer research treatises appeared as monographs of the American Meteorological society, or as separate publications and reports issued by the meteorological departments of universities, government bureaus or their contracting agencies. Good evidence of the broader and more fundamental attack on problems of weather science was seen in the increasing number of excellent research papers and the diversification of their subject matter. Research and development in weather instruments, cloud physics and other subjects incident to experimental and synoptic meteorology were reviewed. Of a more general nature were papers on energy dispersion in the atmosphere, long-period fluctuations of the general circulation, effects of wavelength variations in the long waves of the upper westerlies, effect of viscosity on circulation, large blocking highs (anticyclones) in the general circulation in the westerlies of the northern hemisphere, the mechanism for release of potential energy in the atmosphere, the effects on the surrounding atmosphere caused by subsidence of cold air masses, the instability of wind discontinuities and shower zones in planetary atmospheres, the formation and structure of a large scale disturbance in the westerlies, dynamic characteristics of a tilted model of an atmospheric pressure pattern, the energy acquired by the atmosphere over the oceans through condensation and through heating from the sea surface, confluence theory of the high tropospheric jet stream and a physical basis for numerical prediction of large-scale motions in the atmosphere.

The predominance of papers dealing with the general circulation of the atmosphere was indicative of the basic importance of this subject in the minds of meteorologists. Of special interest was the research in development of mathematical techniques for predicting the weather through use of the electronic computor to perform the very large number of computations involved. The year brought progress but the method was still far from the point of practical everyday use.

International Co-operation.—The new convention for the World Meteorological organization, proposed by the International Meteorological organization in its Washington conference of directors of national meteorological services in 1947, had been ratified by 27 nations as 1949 came to a close. During the year the United States continued its program of assistance to the Philippine meteorological service and to the services in cerin other countries where assistance was required as part of ternational co-operation in support of air commerce.

Of international interest in the Americas was the 30th anni- ersary of the American Meteorological society in December. nvitations to attend the anniversary meeting in St. Louis, Mo., e city where the society was founded, were issued to the di- ctors of national meteorological services in other countries, nd three days of concurrent technical sessions were planned r Jan. 3–6, 1950.

The Weather in 1949.—In parts of western Kansas and ebraska as well as portions of adjoining states the heavy nows and cold weather which began the first week of Jan. 1949 ractically paralyzed normal winter activities for the ensuing x weeks and one blizzard after another threatened to cut off ntirely from many localities the supply of food and other es- ntial commodities. Emergency supplies were flown in by the r force and some of the main roads were reopened with great fficulty by the corps of engineers. Traffic on main railroads as interrupted for days in parts of the middle west and near orthwest. Snowfall was the greatest ever recorded in many calities. At Deadwood, S.D., the fall in January was 77 in. laces in Arizona, New Mexico, Texas and southern California ad snow for the first time in a century. Temperatures in Texas ached the lowest ever recorded there.

In May, Ft. Worth, Tex., had the worst flood in the history the city with rainfall in 24 hr. exceeding ten inches. In the ortheastern states late spring and summer months were un- sually hot and dry. New England had the second hottest July the long meteorological records for that region. As a result the exceptionally dry summer, crop damage in New Jersey, astern New York and New England was heavy and the water pply reservoirs of many cities and towns were seriously de- eted. Toward the close of the year the long rainless period d to a serious water shortage in the entire metropolitan area New York city and bathless days were prescribed as a means keeping water consumption within the limits of available pply. (*See* also DISASTERS; FLOODS AND FLOOD CONTROL.)

(F. W. RR.; X.)

lethodist Church. The world's 13,000,000 Methodists belong to one or another of a dozen odies, organizationally independent but in close fraternal rela- onship through an ecumenical Methodist council. Its next orld conference was to meet in Oxford, Eng., in Aug. 1951.

The Methodist Church in Great Britain, parent body, in July 949 elected Harold R. Rattenbury of London as its president nd John A. Stead of Retford, Notts., vice-president. Total embership, including 258,896 in overseas districts, was re- orted as 1,002,370.

The major Methodist body in the United States, The Meth- dist Church, is inter-racial and in 1949 included 340,000 Negro embers. There are also three independent Negro Methodist enominations: the African Methodist Episcopal Church (816,- 78 members in 1949); the African Methodist Episcopal Zion hurch (527,350); the Colored Methodist Episcopal Church 381,000). Smaller Methodist bodies in the U.S. include the ree Methodist Church of North America (49,590); Wesleyan ethodist Church (31,817); and Primitive Methodist Church 11,963).

The Methodist Church, the largest Protestant body in the .S., on May 10, 1949, closed its first decade since the reunion three bodies brought it into existence. During the ten years otable advances were recorded. Membership since the merger howed a gain of 1,432,382, the number as of Jan. 1, 1950, eing 8,792,569. This figure included 24,255 ministers, but not 71,820 preparatory members or 875 full members in 50 mis- on lands.

The value of churches, parsonages and other church property rose during the decade from $704,117,614 to $1,262,838,909. In 1949 $67,000,000 was spent on new buildings and improvements. The number of preaching places, however, largely because of local mergers of congregations, declined from 42,262 in 1940 to 40,472.

Giving for all purposes during 1949 was $229,297,111. This was three times the total giving of 1939. Of this, $36,590,188 was classified as "benevolences" as contrasted with local church expenditures, ministerial support and connectional operations. The Methodist Committee on Overseas Relief expended $996,945 during 1949, largely for rehabilitation of Christian workers.

Church school membership increased for the fifth successive year. The 1949 figure, 5,807,959, included a Sunday school enrolment of 5,111,704 in 35,841 schools with an average attendance of 2,871,061.

The 30,381 local units of the Woman's Society of Christian Service, with 1,519,427 members, raised a total of $20,182,336 during 1949. Of this, $13,387,724 was for local church purposes and $6,794,612 was for the support of their missionary, educational and philanthropic program.

A record year was reported by the Methodist publishing house, its gross business, $12,285,431, showing an increase of $1,052,867 over 1948.

Progress in the 1948–52 program, the "Advance for Christ and His Church," was registered in observance of a week of dedication in March, stress being placed on lifting world service giving to offset rising costs and the underwriting by 106 annual conferences of $20,000,000 in specific new home and foreign missionary and relief projects.

The four-year study program first centred on the documents of the Amsterdam, Neth., assembly of the World Council of Churches and was followed in October by a nation-wide series of 78 all-day mass meetings to launch a formal study of, and deeper commitment to, Christian faith. Eight months of 1949 and 1950 were dedicated, each to concentration upon a specific doctrine, aided by booklets, sermons and group study.

In addition to routine dispatch of missionaries, 50 selected young people were sent in the late summer to India for three years of teaching and other lay service. Postwar scholarships for graduate students from countries outside the U.S. reached 500. About 560 U.S. students of ability were furnished college scholarships.

A building operation, involving $11,000,000, was under way at Southern Methodist university, Dallas, Tex., including a new plant for Perkins school of theology. Boston university school of theology was moved from Beacon Hill to a new building on the university's Charles river campus, costing, with Marsh chapel, under construction, $3,000,000. In Nashville, Tenn., the denomination's publishing plant was expanded at a cost of $1,500,000 and the board of education had authorized expenditure of $600,000 for a headquarters building.

During the year the section on church extension granted 783 donations for a total of $1,205,957 and approved 366 loans for a total of $2,479,646 to help meet demands created by unprecedented church building.

Bishop Ivan Lee Holt of St. Louis, Mo., was elected in April as president of the Council of Bishops, with Bishop J. Ralph Magee of Chicago, Ill., vice-president. The Latin American Central conference, which has term rather than life episcopacy, chose Santi Uberto Barbieri, president of Union Theological seminary, Buenos Aires, Arg., as bishop to succeed Arthur F. Wesley.

Ralph E. Diffendorfer, foreign mission executive for more than 25 years, retired in October and was succeeded by Eugene L. Smith. Caradine R. Hooton was elected executive secretary of the board of temperance. T. Otto Nall was elected editor of *The Christian Advocate* (Chicago), official weekly. Jameson Jones of Nashville, Tenn., was chosen president of the National Conference of Methodist Youth.

The quadrennial Methodist Student conference brought more than 2,000 collegians to Urbana, Ill., at the year's end to discuss the "Christian Use of Power in a Secular World." (*See* also CHURCH MEMBERSHIP.) (R. SY.)

Mexico. A federal republic lying between the United States of America and Central America, Mexico has an area of 767,168 sq.mi. Population (est. mid-1948) 24,447,000 (19,653,552, census 1940). An estimated (1948) 55% of the population was mestizo, 29% Indian, 15% white and 1% foreigners and other miscellaneous elements. The most important centres of population (est. 1948) were: the Federal District, including Mexico City (2,043,574); Guadalajara (282,280); Monterrey (252,639); Puebla (159,701); Mérida (114,967); Tampico (106,874); Aguascalientes (101,935); San Luis Potosí (97,416); León (93,751); Veracruz (84,012); Chihuahua (70,958); Saltillo (65,553); Pachuca (61,795); Ciudad Juárez (56,128). Language: Spanish, but an estimated 14% speak only Indian tongues. Religion: Predominantly Roman Catholic. There is no official state religion. President in 1949: Miguel Alemán.

History.—The most important events of 1949 were connected with attempts to solve the nation's economic problems. Among these problems were a continuing unfavourable balance of trade and the instability of the Mexican peso. After a series of downward fluctuations from the pegged value of 4.85 to the United States dollar, which began in July 1948, the peso was finally stabilized at 8.65 to the United States dollar on June 17, 1949. Stabilization was achieved with the help of a loan of $25,000,000 from the United States treasury through a renewed stabilization agreement between the two governments, and $22,500,000 from the International Monetary fund. These loans together with the Bank of Mexico's reserves, announced at $84,000,000, gave the 8.65 pesos to the dollar rate a total support of $131,500,000. Certain elements, such as the exporters of Mexican goods and those engaged in the tourist trade, stood to benefit. On the other hand, importers of goods from the United States feared that the new rate would accelerate an already serious inflation.

To halt inflationary tendencies, Secretary of the Treasury Ramón Beteta announced an eight-point program which included balancing the federal budget, prevention of inflationary credits by private banks, containment of monetary circulation, maintenance of wages and salaries at their maximum purchasing power, downward revision of import tariffs to lessen the blow of devaluation to importers, retention of the 15% ad valorem surtax on all exports, prohibition of certain imports (on June 21, 1949, 207 classifications of the Mexican import tariff were added to a previous list of prohibited imports) and suspension of the export permit system.

On the political scene the government, on Jan. 28, 1949, cancelled the registration of the P.F.P. (Partido Fuerza Popular), the political organ of the Unión Nacional Sinarquista. The petition of the P.R.I. (Partido Revolucionario Institucional), the government party, on which the government based its decree, charged that the P.F.P. was antidemocratic, identified with fascist doctrine and aimed at restoring the church to the position of influence it enjoyed before the laws of the reform.

The federal elections, held throughout Mexico on July 3, 1949, resulted in a sweeping victory for the government party, the P.R.I., which won 143 of the 147 contested seats in the chamber of deputies. The remaining 4 seats were won by the more conservative P.A.N. (Partido Acción Nacional). The P.R.I. announced that its candidates had also won in the six state elections for governor. Under Mexico's new compulsory registration and voting law (1948), about 3,500,000 citizens registered although only about 60% of this number voted.

Education.—Education is free, compulsory and secular. There were at the beginning of 1949 3,286,428 students enrolled in 26,343 schools and taught by 90,212 teachers and professors. They were divided in the following categories: preschool, 98,155 students, 2,887 teachers, 837 institutions; primary, 2,997,198 students, 67,860 teachers, 24,625 schools; secondary, 80,598 students, 7,805 teachers, 466 schools; normal 26,998 students, 2,854 teachers, 77 schools; technical, 41,928 students, 3,676 teachers, 199 schools; agricultural, 5,949 students, 701 teachers, 16 schools; universities, 35,602 students, 4,429 faculty members, 12 institutions.

One of the principal aims of Mexican educational policy has been the reduction of illiteracy. To that end a national campaign against illiteracy was initiated in 1944 and during the period 1944–48 1,811,110 people were taught to read and write. It was estimated by the ministry of education that approximately one-third of the population was literate by the end of 1948.

Finance.—The monetary unit is the peso of 100 centavos. After stabilization in June 1949, its value was approximately 11.56 cents, U.S. currency, at an exchange rate of 8.65 pesos to the dollar. However, in this and following sections, except where indicated, dollar sums are calculated on the basis of 6.8775 pesos to the dollar (exchange rate at the end of 1948) since most of the figures cited pertain to the period before the stabilization of June 1949.

The federal budget for 1949 totalled $370,957,155 and was broken down as follows: legislative $2,654,790; presidency $338,786; judicial $1,268,775; government $2,064,704; foreign relations $4,788,077; treasury $12,359,142; defense $38,095,238; agriculture $6,143,221; communications $64,401,818; economy $2,733,551; education $40,712,468; health $18,320,611; marine $10,076,336; labour $843,330; agrarian reform $2,047,256; hydraulic resources $35,696,111; attorney general $589,895; national resources $977,099; military industry $2,643,839; special funds $20,210,832; additional expenses $19,658,306; public debt $84,332,970.

The estimated national income for 1948 was $3,271,537,623. Provisional federal tax receipts for 1948 were $338,960,378. The public debt as of Dec. 31, 1948, was: Internal $274,771,355; external $77,552,890. In 1949, the national railroad debt stood at $557,604,382 (representing principal of $233,112,385 and back interest of $324,491,997). During the year an agreement was made with bond holders to settle the railroad debt for approximately ten cents on the dollar, or $50,000,000 (original sum in dollars). Notes in circulation as of Nov. 3, 1949, were valued at $241,963,011 (at exchange rate of 8.65 pesos to the dollar). The gross reserves of the Bank of Mexico on Dec. 31, 1949, were $144,000,000 (at exchange rate of 8.65 pesos to the dollar).

At the end of 1948, there were 331 banks, credit institutions and auxiliary organizations with 448 additional branches. Their total capital was $118,982,188; total resources $1,250,163,577; total deposits $384,529,262.

Defense.—In 1949, Mexico's budget provided for a total of 55,620 men in the air and ground forces. Of this total, 3,322 were assigned to the air force. The army, including the air force, which is not a separate service, was administered by the department of national defense. The air force had an estimated 250 planes of all types. During the year annual conscription of young men for one year's service was halted, and weekly Sunday training was substituted for those subject to military service.

The navy, merchant marine and coast guard were administered by the ministry of marine. The ministry operated 3 gunboats, 4 frigates, 2 armed transports, 17 coast guard vessels, 7 auxiliary vessels and 12 dredges.

Trade and Communications.—During 1948 and the first six months of 1949, Mexico's balance of trade continued to be unfavourable. Imports in 1948 totalled $429,152,373 and exports totalled $386,953,263. During the first eight months of 1949, imports were valued at $272,547,357, and exports at $253,510,463. The principal imports were machinery and manufactured products. The principal exports were lead, silver, copper, zinc, petroleum, coffee and cotton.

The ten leading countries in Mexico's foreign trade in 1948 with their percentages of the total were: The United States (81.0), Britain (3.0), Cuba (1.2), Canada (1.2), Belgium (1.2), France (1.1), U.S.S.R. (1.0), Sweden (1.0), Italy (0.9), Switzerland (0.6).

In Mexico the railroads were operated by a government agency, Ferrocarriles Nacionales, except for the South Pacific of Mexico which was owned by the Southern Pacific railroad.

There were approximately 15,000 mi. of railroad in Mexico in 1949. The principal lines were Laredo-Mexico City, Mexico City-Veracruz, Interoceanic railroad, Mexico-Jalapa-Veracruz and Nogales-Guadalajara. In April 1949, the government announced a two-year program for renovating its railroad system. The plan proposed to convert all lines to standard gauge, eliminate steep grades and turns and gradually modernize rolling stock. The government program was aided by credits of $17,900,000 from the Export-Import bank.

In 1949, there were approximately 18,133 mi. of passable highways in Mexico. Of this total, 5,465 mi. were hard surfaced. By the end of 1949 the Mexican section of the Pan-American highway was passable from Nuevo Laredo on the United States border, to Comitan, within a few miles of the Guatemalan border. The government had committed itself to spend $142,196,503 (at exchange rate of 8.65 pesos to the dollar) for highways by 1952. Motor vehicle registration for 1948 was:

MEXICANS waiting to vote in the July 1949 elections for a new chamber of deputies. Candidates of Pres. Alemán's party (the P.R.I.) won 143 of the 147 seats

passenger automobiles 134,079; buses 14,790; trucks 86,198; motorcycles 4,276.

In 1948, there were two United States air lines (American Airlines and Pan-American World Airways) and one Central American air line (Transportes Aéreos Centro-Americanos or T.A.C.A.) operating in Mexico. There were three major Mexican air carriers: Cía Mexican de Aviación (C.M.A.), Aeronaves de México, S.A., in which Pan-American World Airways participated, and Lineas Aéreas Mexicanas, S.A., (L.A.M.S.A.), which was wholly owned by United Air Lines. In addition, there were 31 smaller Mexican air lines operating within the country. In 1948 a new company, Aerovías Guest, began operation between Mexico City and Spain and Portugal. During 1948, 22,085,925 mi. were flown by all lines, and 815,118 passengers were carried.

Telegraph service in Mexico, with minor exceptions, was operated by the government-owned Telégrafos de México. In 1948, the Mexican telegraph system operated approximately 660 offices and 44 stations. In the same year there were 239,749 telephones, 156 standard broadcasting stations and 1,113,000 radios in use.

Agriculture.—Land utilization in 1948 was: cropland 36,746,426 ac.; pasture land 139,024,074 ac.; forest land 95,517,046 ac.; productive uncultivated land 21,765,695 ac.; agriculturally unproductive land 26,719,056 ac. It was estimated that there were 57,574,300 ac. of potential cropland.

In the field of hydroelectric development and irrigation, important advances were made in 1949. Irrigation works completed during the year opened up 274,281 ac. of land for agricultural development. Work was progressing well on two large hydroelectric projects, one on the Tepalcatepec river in the state of Michoacan and the other on the Papaloapan river in the state of Veracruz. The latter was the largest and the main dam, when completed, would hold 8,109,600,000 cu.yds. of water.

Agricultural production for 1948 (in tons) was: maize 3,120,611; wheat 525,797; rice 190,698; sugar 673,505; beans 231,072; chick-peas 131,276; bananas 330,681; pineapples exported, fresh 42,428, preserved 6,699; coffee 58,604; henequen (bales) 120,000; chicle 2,650; oranges 441,175; green peppers 41,226; dry peppers 15,846; potatoes 141,092; cotton (bales) 520,000; cottonseed 234,790; sesame 80,303; tobacco 25,474; avocados 65,909; vanilla 275,575; alfalfa, green 2,478; tomatoes 315,747; copra 34,642.

Estimates of 1949 production indicated that during the period 1946–49 the yield of 11 basic crops had increased by 1,511,231 tons and by $102,659,775 in value (at exchange rate of 8.65 pesos to the dollar).

The 1940 animal census was: cattle 11,621,879; horses 2,511,175; mules 932,522; donkeys 2,341,539; sheep 4,401,014; goats 6,849,709; hogs 5,067,642. It was estimated that by the end of 1948 the total number of animals had increased between 20% and 25%.

The year 1949 found the joint Mexican-U.S. campaign against foot-and-mouth disease in its third year. The infected area, which at its worst stage included more than 219,867 sq.mi., was reduced by May 1949 to 180,223 sq.mi., or by approximately 22%.

Timber produced in 1947 was 398,315,352 bd.ft. of sawed lumber, 35,171,424 bd.ft. of rough hewn lumber and 95,382,192 bd.ft. of logs. Production was principally of pine, oak, fir, red and white cedar and mahogany. In 1947, production of turpentine was 249,048 tons, of charcoal 13,541,988 tons, of pitches and resins 1,974,478 tons, of vegetable wax 347,014 tons and of other timber products 362,022 tons.

Manufacturing.—Total value of Mexican industrial production for 1948 was $482,852,300.

Industrial Production of Mexico

Industry	Value of product, 1948
Vegetable oils	$24,085,900
Alcohol	6,999,600
Rubber goods	24,647,300
Refined sugar	60,102,800
Drygoods	7,281,100
Shoes	8,038,400
Cabinetmaking	2,833,300
Cement	10,930,600
Matches	5,542,400
Beer	36,177,200
Cigarettes and cigars	25,482,700
Canned goods	7,661,800
Cookies, crackers and food pastes	8,229,000
Iron and steel	$30,762,100
Cotton thread and cloth	100,731,800
Woollen thread and cloth	15,258,900
Silk and rayon thread and cloth	12,720,200
Soap	28,080,300
Bricks, tile etc.	1,225,200
Flour	37,179,900
Floor and wall tile, etc.	2,113,400
Paper	15,400,900
Working clothes	3,499,400
Glass	7,868,100
Total	$482,852,300

During 1948 tourists spent $185,000,000 as compared with $118,000,000 in 1947; 207,859 tourists entered Mexico during the first eight months of 1949 compared with 175,174 during the first eight months of 1948.

Mineral Production.—Total mineral and metal production (excluding petroleum) for 1948 was 810,712 tons with an estimated value of $190,686,169. Production of the most important metals (in tons) was: lead 213,094; zinc 197,345; silver 1,972; copper 65,119; gold 12.6; antimony 8,135.

The petroleum industry was completely controlled by the government-owned Petróleos Mexicanos (Pemex). This company operated four major oil fields in the states of Tamaulipas and Veracruz and in the Isthmus of Tehuantepec. Petroleum production in 1948 was 58,507,968 U.S. barrels.

During 1949, Mexico's petroleum industry failed to solve its major problem, lack of capital for extensive exploratory drilling and for the modernization and relocation of existing refineries and the construction of new ones. During the first half of the year negotiations were in progress for a substantial loan from the Export-Import bank, but on July 19 these were discontinued on the initiative of Mexico. The basic difficulty was the difference in opinion between the two parties as to the nature and extent of participation of United States capital in the Mexican industry. However, an independent agreement was reached between Pemex and a group of United States oil companies for exploratory drilling during the next 12 yr. The United States companies were to receive a percentage of the production of the new wells they drilled.

FILMS OF 1949.—*Modern Design for Travel—Mexico* (National Education Association); *Pacific Coast of Mexico—Baja California; Pacific Coast of Mexico—Mainland* (Johnson-Hunt Productions)· *Road for San Pablo; There Were Two Doctors* (Simmel-Meservey). (L. N. M.)

Michigan. One of the north central group of states of the U.S., Michigan was the 26th state admitted to the union; it is popularly known as the "Wolverine state." Land area 58,216 sq.mi. (excluding 39,960 sq.mi. of Great Lakes water surface); pop.: (1940) 5,256,106; est. of the U.S. census bureau, July 1, 1949, 6,352,000. Of the state's population in 1940, 3,454,867 were urban; 1,801,239, rural. Whites composed 95.9% of the population; nonwhites, 4.1% (215,934). Capital: Lansing (78,743), est. Jan. 1, 1950 (115,000). Larger cities were Detroit (1,623,452), est. Jan. 1, 1950 (1,950,000); Grand Rapids (164,292), est. Jan. 1, 1950 (185,000); Flint (151,543), est. Jan. 1, 1950 (180,000); Saginaw (82,794), est. Jan. 1, 1950 (95,000).

History.—During the first four and one-half months of 1949, while the 65th legislature was in session, there was great public interest in how the Michigan Fair Deal program of the Democratic governor, G. Mennen Williams, would fare at the hands of the Republican legislative branch of the government. Williams was hopeful at first of bipartisan support for his proposals; when the legislature had adjourned, he remarked that for him the session had been "a moderate to keen disappointment." In all, 887 bills were introduced, and 328 measures were passed. Several were in the interest of veterans, including provisions for broader homestead tax exemptions and for counting time in military service toward job seniority. Workmen's compensation legislation was liberalized, and the Bonine-Tripp act, which labour had found objectionable, was somewhat modified.

Old-age assistance maximum benefits were increased to $60 per month and recipients were permitted to own $6,000 in land contracts. Free immunization of children against certain diseases was authorized. The manufacture and sale of coloured oleomargarine was legalized; referendum petitions were immediately circulated, however, and a state-wide referendum at the Nov. 1950 election was ordered. Considerable controversy attended the passage of legislation which in effect killed Michigan's one-man grand jury law by placing inquiry under three judges, and requiring that indictments be unanimous. A grant-in-aid of $82,000,000 was made to local public schools.

Among the measures rejected by the legislature were bills to repeal Michigan's century-old ban on capital punishment, to reduce the number of state boards and commissions, to repeal the secret primary election ballot law and to reapportion the state legislature. The legislature, adjourning on May 21, left the state's budget incomplete because of the inability of the two houses to reach agreement with respect to the amount of money to be appropriated to state-supported colleges and universities. Reconvening on June 19, the two houses of the legislature agreed on a compromise $29,637,335 general education appropriation.

Of the 328 bills passed by the legislature, 8 were vetoed by Governor Williams; all of the vetoes were sustained. The governor announced that the legislature would be convened in special session on March 15, 1950.

In the April election, Republican candidates for state offices made a clean sweep. In the nominally nonpartisan race for the state supreme court, George E. Bushnell and Edward M. Sharpe, incumbents, who were endorsed by the Democratic party, were re-elected, defeating Arthur E. Moore and Charles W. Rigney, who had Republican endorsement, and Morton A. Eden, who was sponsored by the Progressive party.

Education.—In 1948–49, elementary school enrolment was 661,327, with 21,108 teachers; secondary school enrolment, 353,269, with 13,453 teachers. Fall enrolment in public-supported universities and four-year colleges was 64,335. An outstanding event in the history of higher education was the gift by the Kresge foundation in October of $3,000,000 for the establishment of a medical research centre at the University of Michigan, Ann Arbor. Lee M. Thurston, incumbent by appointment, was elected state superintendent of public instruction in April.

Social Insurance and Assistance, Public Welfare and Related Programs.—The various state institutions of correction and their populations, as of June 30, 1949, were as follows: State Prison of Southern Michigan, 5,844; Michigan reformatory, 1,307; Marquette Branch prison, 816; Detroit House of Correction, 393; Cassidy Lake Technical school, 153; wayward minor boys in custody, 7. Total expenditures for the fiscal year 1948–49 amounted to $8,295,972 (including $324,289 for capital expenditures).

The Michigan Unemployment Compensation commission reported benefit payments of $100,000,000 for 1949, double that of 1948. Its reserve fund, however, was reported at more than $300,000,000. In Detroit, the commission's records showed that the number of unemployment compensation claims declined during December from 160,595 to 104,000; also that the number of persons who had exhausted their benefits through prolonged unemployment was decreasing.

Old-age assistance and aid to dependent children showed a gradual rise through 1948 and 1949. At the end of 1949, however, direct relief was down from its March 1949 peak. On the other hand, it was averaging 16% higher than the preceding year, and more than 56% above the corresponding month of the 1947–48 fiscal year.

Communications.—The total amount of money spent during 1949 for road and bridge construction, including engineering and right-of-way, was in excess of $45,000,000. Construction work completed included 248 mi. of grading and drainage structures, 155 mi. of concrete pavement, 167 mi. of bituminous concrete resurfacing, 220 mi. of other types of bituminous surfacing, 113 mi. of stabilized aggregate surfacing and 65 bridges. For the maintenance of 9,534 mi. of rural and municipal highways on the trunk line system, the cost was more than $13,000,000. During the year the state ferry system at the Straits of Mackinac, in 27,000 round trips, carried 605,000 vehicles and 1,200,000 passengers.

Banking and Finance.—As of June 30, 1949, 346 state banks had total assets of $2,552,445,206.02; 3 industrial banks, $9,190,605.25; 7 trust companies, $38,775,513.07; total assets of 78 national banks in Michigan aggregated $2,612,041,000. Total assets of 36 building and loan associations in Michigan were $133,314,876.44.

Table I.—*Leading Agricultural Products of Michigan*

Crop	1949 (Preliminary)	1948	Average 1938–47
Corn, all, bu.	85,920,000	67,119,000	55,653,000
Winter wheat, bu.	35,019,000	36,270,000	19,844,000
Oats, bu.	56,700,000	56,672,000	49,818,000
Potatoes, bu.	17,160,000	16,350,000	19,054,000
Apples, Commercial, bu.	11,735,000	4,830,000	6,840,000
Peaches, bu.	3,900,000	3,250,000	3,444,000
Barley, bu.	3,562,000	4,480,000	5,016,000
Field beans, cwt.	5,968,000	4,435,000	4,418,000
Hay, tons	3,362,000	3,606,000	3,785,000

Agriculture.—Michigan's 1949 production of field crops was substantially above that of 1948 and of the average: this was also true of the important tree fruit and grape crops. The total harvested acreage of crops was 8,321,000. Milk production was 5,689,000,000 lb. The spring and fall pig crops totalled 1,557,000.

Manufacturing.—The manufacturing record of 1949 was, in general, one of prosperity. During the closing months of the year, monthly rates of automobile production were well above those of the preceding two years, although what the delayed effect of the coal and steel strikes might be was not yet determined. Manufacturing employment, recovering from the summer's low, at the end of 1949 was about 4% below the record of the fall of 1948. Average weekly earnings for production workers in 1949 were slightly above those of the previous year.

Table II.—*Mineral Products of Michigan*

	1948		1947	
	Quantity	Value	Quantity	Value
Iron ore, long tons	12,896,478	$53,246,591	12,400,000	$47,348,160
Petroleum, bbl.	16,870,000	47,860,000	16,216,000	34,932,000
Coke, tons	2,849,601	39,637,987		
Cement, bbl.	11,116,911	23,533,001	10,470,766	18,868,187
Salt, tons	4,387,879	16,265,743	4,531,761	15,127,549
Stone, tons	19,704,150	14,620,527	18,600,370	12,601,288
Sand and gravel, tons	20,671,078	14,071,712	16,845,431	10,758,243
Copper, lb.	55,554,000	12,055,218	47,055,000	10,680,000
Bromine, lb	17,666,243	5,435,940	18,802,636	5,054,787

Mineral Products.—Production estimates for 1948 and 1947 are shown in Table II. (L. G. V. V.)

Microphotography: *see* PHOTOGRAPHY.

Milbank Memorial Fund: *see* SOCIETIES AND ASSOCIATIONS.

Milk: *see* DAIRY PRODUCTS.

Mineral and Metal Production and Prices.

In order to present a representative picture of the distribution of mineral production throughout the world, there has been compiled in Table I as much of the world production data as can be included in one page. Lack of space makes it necessary to omit from the table many minor products and many minor producers, but the data presented are sufficiently comprehensive to indicate the general distribution of the production and the relative importance of the more important producing countries.

Similarly, in Table II will be found the prices for the leading minerals and metals, as quoted on the New York and London markets at the beginning and end of 1949. Many of these prices, and especially the major nonferrous metals, took sharp drops during the year, marking the end of the postwar period required to exhaust the backlog of industrial demand that had accumulated during the war years. Following the abandonment of price control in 1946 there was a practically continuous advance in prices.

The *E. & M. J. Metal and Mineral Markets* weighted index of nonferrous metal prices, which averaged 90.86 in 1945, rose to 142.19 in Dec. 1946, to 152.48 in Dec. 1947, to 185.52 in Dec. 1948. A peak of 185.75 in Feb. 1949 was followed by a gradual decline to 131.20 in June and a reaction to 142.24 in September, with further minor fluctuations in subsequent months, closing at approximately the level prevailing late in 1946.

Table III shows the trend of dollar value of mineral production in the United States, as reported by the U.S. bureau of mines. To secure comparative adjusted totals that, so far as possible, eliminate the distortion caused by advancing prices, the 1939 reported total was used as a base figure, from which adjusted totals were obtained by multiplying by the federal reserve board index of mineral production (base, 1939=100) for each of the succeeding years.

While these adjusted totals are not strictly accurate, they provide an approximation of production values which are more nearly in their true perspective.

(*See* also the articles on the various metals and minerals.)

Table I.—World Mineral and Metal Production in 1948

(Metric tons unless otherwise specified: Th. indicates thousands and Mi. millions of units.)

Country	Aluminum (Th.)	Antimony	Asbestos (Th.)	Bauxite (Th.)	Cadmium	Chromite (Th.)	Coal (Mi.)	Coke (Mi.)	Copper in Ore (Th.)	Copper (Smelter) (Th.)	Diamonds (Th. carats)	Gold (Th. oz.)	Iron Ore (Th.)	Pig Iron (Th.)	Steel (Th.)	Lead in Ore (Th.)	Lead (refined) (Th.)
Algeria	—	817	p	—	—	—	0.23	—	—	—	—	—	1,872	—	—	1.0	—
Angola	—	—	—	—	—	—	—	—	—	—	796	—	—	—	—	—	—
Australia	—	162^{7}	1.4^{7}	3.0^{7}	223.9	p	23.4?	1.34^{7}	13.4	13.3	—	890	2,140	1,255	1,236	207.8	191.8
Belgian Congo	—	—	—	—	18.0	—	0.11^{7}	—	155.5	155.5	5,825	300	—	—	—	0.6	—
Belgium	—	—	—	—	157.9	—	26.68	3.73	—	—	—	—	90	3,937	3,917	—	—
Bolivia	—	11,280	0.1	—	—	—	—	—	6.6	—	—	4	—	—	—	25.6	—
Brazil	—	—	p	—	—	1.6	2.01	0.27	—	—	250?	157	1,441	532	462	—	—
Burma	—	66^{7}	—	17	—	—	—	—	—	—	—	—	p	—	—	7.6	7.6
Canada	333.0	124	650.2	—	346.1	1.5	16.72	3.12	217.6	192.6	—	3,528	1,228	2,151	2,866	149.0	145.2
Chile	—	—	p	—	—	—	2.24	—	448.3	424.9	—	157	2,545	481^{7}	—	—	—
China	p	3,251	P	—	—	—	8.72	0.09	0.5	0.5	—	108^{7}	246	47	—	?	?
Colombia	—	—	—	—	—	—	0.85^{7}	—	—	—	—	335	—	—	—	—	—
Czechoslovakia	—	1,593	P	—	—	—	41.34	5.22	—	—	—	2^{7}	1,428	1,660	2,645	?	?
France	64.8	200^{7}	0.5^{7}	790	50.1	—	45.13	6.16	p	p	—	33^{7}	23,031	6,573	7,243	11.6	34.8
Germany	7.3	—	—	p	3.5	—	267.08	18.98	17.5^{7}	62.2	—	—	6,534	5,630	5,558	22.3	49.2
Gold Coast	—	—	—	132.2	—	—	—	—	—	—	850?	672	—	—	—	—	—
Greece	—	—	—	40.2	—	1.5	—	—	—	—	—	—	p	—	—	1.6	1.6
Guiana, Brit.	—	—	—	1,903.2	—	—	—	—	—	—	36	17	—	—	—	—	—
Guiana, Neth.	—	—	—	2,149.9	—	—	—	—	—	—	—	4	—	—	—	—	—
Hungary	5.2	—	—	300	—	—	10.60	—	p	—	—	2^{7}	276	121	742	—	—
India	3.4	—	0.1^{7}	12.9^{7}	—	35.3^{7}	30.79	1.66^{4}	6.3	6.0	—	180	2,536^{7}	1,457	1,224	—	—
Indo-China	—	—	—	—	—	—	0.36	—	—	—	—	—	p	p	—	—	—
Italy	33.1	430	11.8	160	49.7	—	1.96	2.28	p	p	—	2^{5}	455	525	2,125	30.1	26.4
Japan	7.0	124	4.6	—	18.9	9.3	35.25	1.93	25.8	54.3	—	70	556	832	1,714	6.7	10.6
Luxembourg	—	—	—	—	—	—	—	—	—	—	—	—	3,399	2,626	2,453	—	—
Malaya	—	—	—	—	—	—	0.38	—	—	—	—	10	p	—	—	—	—
Manchuria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mexico	—	6,790	—	—	P	—	1.06^{7}	0.53^{7}	59.1	48.8	—	368	229	270	269	197.5	194.5
Morocco, Fr.	—	411	0.4	—	—	—	0.29	—	0.4	—	—	p	301	—	—	28.2	—
Neth. Indies	—	—	—	437.8	—	—	0.29	—	p	—	—	—	—	—	—	—	—
New Caledonia	—	—	—	—	—	75.0	—	—	—	—	—	—	p	—	—	—	—
Norway	30.1	—	—	—	69.0	—	—	—	13.6	8.7	—	—	288	202	—	—	—
Peru	—	1,770	—	—	2.4	—	0.19	p	18.1	12.8	—	111	—	—	—	48.5	34.8
Philippines	—	—	—	—	—	256.9	0.09	—	3.4	—	—	209	18	—	—	—	—
Poland	—	—	—	—	115.0^{6}	—	75.28	4.66	—	—	—	—	602	1,133	1,878	7.8^{7}	16.9
Portugal	—	23^{7}	p	—	—	p	0.49	—	—	—	—	16^{7}	p	—	—	—	—
Rhodesia, No.	—	—	—	—	—	230.7	—	—	226.5	217.0	—	p	p	—	—	13.2	13.2
Rhodesia, So.	—	10	62.5	—	—	—	1.70	p	p	—	—	514	30	—	—	—	—
Sierra Leone	—	—	—	—	—	7.9	—	—	—	—	466	2	968	—	—	—	—
South Africa	—	3,700	41.5	—	—	412.8	23.56	0.31^{6}	29.5	29.0	1,200?	11,584	1,164	651	600	—	—
So.-West Africa	—	—	—	—	P	—	—	—	10.8	—	201	p	p	—	—	25.4	—
Spain	1.0	270	—	8.9	—	—	11.62	0.83	11.8^{7}	20.8	—	3^{7}	1,717	530	536	27.3	22.0
Sweden	3.5	—	—	—	—	—	0.4?	0.08	16.3	15.5	—	76^{7}	12,061	754	1,256	20.9	5.5
Thailand (Siam)	—	8.5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Tunisia	—	—	—	—	—	—	0.07	—	—	—	—	—	696	—	—	13.4	18.2
Turkey	—	520	0.2	—	—	285.4	3.45	0.34	12.4	11.0	—	—	185	166	99	—	—
United Kingdom	30.5	—	—	—	115.8	—	211.77	15.58	—	—	—	—	13,320	9,423	15,116	2.3	2.3
United States	565.6	5,416	33.6	1,480.5	3,527.0	3.2	590.62	61.06	757.3	839.6	—	2,025	102,855	56,214	80,413	351.0	418.5
U.S.S.R.	140	P	P	500	P	—	201.?	14.5^{6}	180	180	—	7,000	21,000^{6}	12,770	20,000	P	P
Venezuela	—	—	0.2	—	—	—	0.02	—	—	—	76	50	—	—	—	—	—
Yugoslavia	p	p	—	p	—	—	11.50	—	P	P	—	—	P	172	—	?	?
World Total	1,265	41,300	989	8,246	4,772	2,113	1,689	160.5	2,321	2,341	10,028	29,600	211,000	112,700	155,000	?	?

Country	Magnesite (Th.)*	Manganese ore (Th.)	Mercury Flasks	Nickel (Th.)	Petroleum (Mi. bbl.)	Phosphate rock (Th.)	Platinum (Th. oz.)	Potash (Th.)	Pyrite (Th.)	Salt (Th.)	Silver (Th. oz.)	Sulphur (Th.)‡	Tin in ore (Long tons)	Tin (Long tons)	Tungsten conc.§	Zinc in ore (Th.)	Zinc (smelter) (Th.)
Algeria	—	—	377	—	—	670.6	—	—	15.1	77^{7}	48^{7}	—	—	—	—	6.1	—
Angola	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Australia	37.4^{7}	1.8^{7}	p	—	—	5.4^{7}	0.1	0.4	119.7^{7}	89	10,058	—	1,874	254	1,132^{7}	151.7	83.1
Belgian Congo	—	17.6^{7}	—	—	—	—	0.2	—	—	1	3,806	—	14,073	3,875	236	46.5	—
Belgium	—	—	—	—	—	68.9	—	—	P	—	—	—	—	10,469	—	—	153.9
Bolivia	—	—	p	—	—	—	—	—	—	—	7,562	2.7	37,336	81	2,485	—	—
Brazil	p	141.3	—	p	—	—	—	—	3.6	781	23	—	240	—	1,144	—	—
Burma	—	p	—	—	0.3	—	—	—	—	56^{6}	450	—	1,163	—	1,045^{7}	—	—
Canada	—	0.2	—	118.9	12.4	—	116.6	—	167.0	672	14,569	—	309	309	727	214.8	178.3
Chile	—	20.5	359	—	—	59.5	—	p	—	78	990	13.3	—	—	p	—	—
China	P	22	290	—	—	—	—	p	42.9	2,842	2^{7}	P	4,800	1,606	12,200	—	0.3
Colombia	—	—	—	—	23.9	—	40.0	—	—	124	109	—	—	—	—	—	—
Czechoslovakia	P	—	800	—	—	—	—	—	3.2	9^{6}	1,600	—	—	—	—	—	2.0^{7}
France	—	—	—	—	—	56.8^{7}	—	466.7	179	1,991^{6}	535^{6}	13.8	78	—	391^{7}	12.2	55.5
Germany	P	89^{7}	P	—	4.5	0.5	—	1,925.5	583.1	1,912	867	—	100	26	—	28.9	41.4
Gold Coast	—	640.1	—	—	—	—	—	—	—	—	54^{6}	—	—	—	—	—	—
Greece	12.2	p	—	—	—	—	—	—	16.2	52	—	p	—	—	—	—	—
Guiana, Brit.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Guiana, Neth.	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Hungary	—	33.5^{7}	—	—	3.7	—	—	—	P	p	15^{6}	—	—	—	—	—	—
India	52.4^{7}	456.5^{7}	—	—	2.4	0.9^{7}	—	1.1	P	2,378	12^{7}	P	—	—	p	—	—
Indo-China	—	—	—	—	—	—	—	—	—	64	—	—	30	60	—	—	—
Italy	p	26	39,000	p	—	p	p	—	753.7	559	601	170	120	120	p	79.8	26.8
Japan	—	47.5	1,526	—	1.1	3.6	—	—	1,138	319	2,231	40.1	120	146	9	33.4	21.2
Luxembourg	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Malaya	—	—	—	—	—	—	—	—	—	—	—	—	44,815	49,707	87	—	—
Manchuria	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mexico	—	53.8	9,700^{7}	—	58.5	—	—	—	—	157	57,520	2.1	182	181	168	171.6	48.3
Morocco, Fr.	—	214.4	—	—	—	3,226.3	—	—	—	64^{7}	117^{6}	—	—	—	—	2.3	—
Neth. Indies	—	—	—	—	31.6	—	p	—	—	360	—	P	29,206	136	—	—	—
New Caledonia	—	—	—	4.9	—	P	—	—	—	—	—	—	—	—	—	—	—
Norway	1.7^{7}	—	—	—	—	—	—	—	735.4	—	148	—	—	p	p	6.0	42.0
Peru	—	—	—	—	14.8	—	—	—	—	60	10,422	1.0	74	—	227	—	1.5
Philippines	—	25.6	—	—	—	P	—	—	—	—	151	—	—	—	—	64.9	—
Poland	3.8^{7}	—	—	—	1.0	—	—	—	39.7^{7}	726	—	—	—	—	—	—	87.1
Portugal	—	2.4^{7}	—	—	—	—	—	—	556.1	—	—	—	453	240	2,930	—	—
Rhodesia, No.	—	4.0	—	—	—	—	—	—	—	—	—	—	—	—	—	22.5	22.5
Rhodesia, So.	5.7	—	—	—	—	—	—	—	13.2	—	81	—	105	—	80	—	—
Sierra Leone	—	—	—	—	—	—	0.1	—	—	—	—	—	—	—	—	—	—
South Africa	10.7	276.4	—	0.5	—	39.7	73.7	—	36.0	124^{4}	1,171	—	457	554	151	—	—
So.-West Africa	—	—	—	—	—	1.0	—	—	—	15	301	—	111	—	12	—	—
Spain	5.6	17.7	55,608^{7}	—	—	20.2	—	115.8	1,110.7	835^{7}	206	17.0	400	352	888	47.0	21.2
Sweden	—	10.7^{7}	p	—	—	50.7^{6}	—	—	310.6^{7}	—	1,089^{7}	—	—	—	322^{7}	36.3	—
Thailand (Siam)	—	—	—	—	—	—	—	—	—	78^{6}	—	—	4,240	—	495	—	—
Tunisia	—	—	—	—	—	1,863.7	—	—	3.2	93^{6}	60^{6}	—	—	—	—	2.5	—
Turkey	3.4	8.3	98^{7}	—	—	—	—	—	p	237	—	2.4	—	—	—	—	—
United Kingdom	—	—	—	—	—	—	—	—	10.1^{7}	3,189	25	—	1,281	30,218	68^{7}	—	73.1
United States	341.1^{7}	118.9	14,388	0.8	2,016.3	8,807.9	19.3	757.1	943.4	14,881	39,228	4,869.2	6	36,703	3,633	563.8	714.6
U.S.S.R.	P	1,800	P	25	211.8	P	125	—	P	—	—	P	—	—	P	—	106^{7}
Venezuela	1.9	—	—	—	490.0	—	—	—	—	36	—	—	—	—	—	—	—
Yugoslavia	P	—	—	—	—	—	—	—	P	—	—	—	—	—	—	—	—
World Total	2,000	3,900	164,000^{7}	150	3,414	17,000	520	3,431	9,000	42,488	171,000	5,300	151,800	153,300	32,000	?	1,692

otes: Each item of data previous to 1948 is followed by a reference superscript indicating the year to which the figure belongs—^{7} for 1947, ^{6} for 1946, and so on for the earlier years. A figure followed by ? or with less imals than others in the column is an estimate. The letter "p" indicates a small production unknown in amount or less than the minimum base of the table; "P" indicates a larger but unknown production.
Crude magnesite. †K_2O equivalent of salts produced. ‡Mainly crude sulphur, but includes some ore and some sulphur recovered from roaster gases. §60% WO_3 basis.

Table II.—*Mineral and Metal Prices in 1949*

New York market as reported by *E. & M. J. Metal and Mineral Markets*					London market as reported by the *Metal Bulletin*							
Open	Close	Grade	Units		Grade	Units	Open (f)			Close (g)		
							£	s.	d.	£	s.	d.
17.00 ¢	17.00 ¢	99% ingot	Pound	Aluminum	98–99%	Long ton	87	..	..	112	..	..
$ 5.10	$ 2.75	50–55% Sb	S.T. unit	Antimony, Ore	50–55% Sb	Unit	..	25	6	..	21	6
41.67 ¢	35.28 ¢	Domestic, cased	Pound	Antimony	Domestic, 99%	Long ton	200	..	..	185	..	..
6.00 ¢	5.5 ¢	White oxide	"	Arsenic	Foreign, 99%	"	43	5	..	39	15	..
$ 24.50	$ 24.50	4% Be (a)	"	Beryllium-copper alloy	(a, d)	Pound	8	10	..	8	10	..
$ 2.00	$ 2.00	Ton lots	"	Bismuth		"	..	10	9	..	14	6
$ 2.00	$ 2.00	Commercial sticks	"	Cadmium		"	..	12	6	..	14	6
$ 38.50	$ 37.50	48% Cr_2O_3, 3 Cr:1 Fe	Short ton	Chromium, Ore	Rhodesian, 1st grade	Long ton	10	4	..	10	4	6
$ 1.02	$ 1.12	97%, spot	Pound	Metal	98–99%	Pound	..	5	1	..	5	1
19.55 ¢	19.55 ¢	4–9% C, 65–69 Cr (a)	"	Ferroalloy	4–8% C, 60% Cr	Long ton	60	..	..	60	..	..
$ 1.65	$ 1.80	97–99% Co	"	Cobalt		Pound	..	10	..	..	13	6
23.20 ¢	18.20 ¢	Domestic	"	Copper	Fire ref., high gr.	Long ton	139	10	..	152	10	..
23.45 ¢	18.425 ¢	Export	"	"	Electrolytic	"	140	..	..	153	..	..
$ 35.00	$ 35.00		Ounce	Gold	Official	Ounce	..	172	3	..	248	..
$ 2.25	$ 2.25	99.9% In	"	Indium		"	..	12	6	..	13	..
$112.50	$102.50	Sponge, powder	"	Iridium	Sponge, powder	"	25	..	..	35	..	..
$ 6.20	$ 7.20	Mesabi, nonbessemer	Long ton	Iron Ore			..	(e)	..	..	(e)	..
$292.17	$147.67	80%, Joplin, Mo.	Short ton	Lead, Ore			..	(e)	..	..	(e)	..
21.50 ¢	12.00 ¢	New York	Pound	Metal	Foreign, soft	Long ton	112	..	..	97	..	..
20.50 ¢	20.50 ¢	99.8% car lots	"	Magnesium, Ingots		Pound	..	1	2	..	1	2
27.50 ¢	27.50 ¢		"	Sticks		"	..	1	6	..	1	6
71.60 ¢	82.80 ¢	48% Atlantic ports	L.T. unit	Manganese, Ore	48–50% Mn	Unit	..	2	8	..	..	35
30 ¢	35.5 ¢	96% Mn, 2% Fe	Pound	Metal	96–98% Mn	Pound	..	1	5½	..	1	5½
$160.00	$172.00	78–82%	Long ton	Ferroalloy	78% Mn, 1% C	Long ton	86	..	..	86	..	..
$ 62.00	$ 65.00	19–21% Mn	"	Spiegel	20% Mn	"	14	7	3	17	8	..
$ 91.50	$ 72.00	(76 lb.)	Flask	Mercury	(76 lb.)	Flask	15	..	..	26	5	..
45 ¢	54 ¢	90% MoS_2 (b)	Pound	Molybdenum, Ore	85% MoS_2	Unit	..	49	6	..	88	6
$ 2.80	$ 2.80	99% Mo	"	Metal	Powder	Pound	..	35	9	..	32	6
95 ¢	$ 1.10	55–65% Mo (a)	"	Ferroalloy	70–75% Mo (a)	"	..	5	8	..	8	6
40.00 ¢	40.00 ¢	Cathodes	"	Nickel	Refined	Long ton	224	..	..	321	10	..
$ 24.00	$ 24.00		Ounce	Palladium		Ounce	5	5	15	8	10	..
$ 58.50	$ 75.00	24% P	Long ton	Phosphorus, Ferro-	20–25% P	Long ton	23	12	6	23	12	6
$ 93.00	$ 69.00	Wholesale	Ounce	Platinum		Ounce	21	15	..	24	..	..
$125.00	$125.00		"	Rhodium		"	27	10	..	40	..	..
$ 2.00	$ 2.00	99.5%	Pound	Selenium		Pound	..	10	..	..	14	4
16.75 ¢	19.00 ¢	97+% Si, spot	"	Silicon	98% Si	Long ton	113	7	6	120	..	..
11.3 ¢	11.3 ¢	50% Si (a)	"	Ferroalloy	45% Si	"	32	10	..	32	10	..
13.5 ¢	13.5 ¢	75% Si (a)	"	"	75% Si	"	49	..	..	49	..	..
70.00 ¢	73.25 ¢	Foreign, New York	Ounce	Silver	Official, spot	Ounce	..	..	42½	..	..	64
$ 2.375	$ 2.25	60% Ta_2O_5 (a)	Pound	Tantalum, Ore	60–65% Ta_2O_5	Unit	11	..	..	11	..	..
$143.00	$143.00	Sheet	Kilo	Metal	Powder	Pound	15	..	..	..	(e)	..
$ 1.75	$ 1.75		Pound	Tellurium		Pound	..	8	9	..	12	6
$ 1.03	77.5 ¢	Straits	Pound	Tin	99%+	Long ton	569	..	..	598	..	..
$ 1.40	$ 1.40	20–25% Ti (a)	Short ton	Titanium, Ferroalloy	20–25% Ti	"	100	..	..	100	..	..
$ 19.00	$ 15.00	56–59% TiO_2	Long ton	" , Ilmenite	50–52% TiO_2, Malayan	Long ton	8	..	..	7	10	..
7 ¢	4.5 ¢	94% TiO_2	Pound	" , Rutile	95% TiO_2, Austral.	"	24	..	..	22	10	..
$ 28.50	$ 28.50	Domestic	S.T. unit	Tungsten, Ore	65%	Unit	..	116	3	..	90	..
$ 24.50	$ 18.75	Chinese	"	"								
$ 2.30	$ 2.30	75–80% W (a)	Pound	Ferroalloy	80–85% W (a)	Pound	..	8	..	..	6	6
$ 2.90	$ 2.90	98.8% W	"	Powder	98–99% W	Pound	..	9	..	..	7	6
27.50 ¢	27.50 ¢	(c)	"	Vanadium, Ore	18–20% V_2O_5	Unit	..	70	..	..	80	..
$ 3.00	$ 3.00	(a)	"	Ferroalloy	35–60% V (a)	Pound	..	15	..	..	15	..
$110.00	$ 57.00	60%, Joplin, Mo.	Short ton	Zinc, Ore	52% R/C	Long ton	13	5	..	..	nom.	..
17.50 ¢	9.75 ¢	St. Louis	Pound	Metal	G.O.B., foreign	"	106	..	..	85	10	..

(a) Per pound of base metal contained. (b) Per pound of MoS_2 contained. (c) Per pound of V_2O_5 contained. (d) Plus 1s. 7d. per pound of alloy. (e) Not quoted. (f) Jan. 1, 1949. (g) Dec. 15, 1949.

Table III.—*Value of Mineral Products of the United States*

(Millions of dollars)

Year	Metallics	Fuels	Nonmetallics	Total	Adjusted Total	Prod. Index
1939	1,291.7	2,834.3	788.2	4,914.2	4,914	100
1940	1,678.6	3,116.5	812.8	5,613.9	5,406	110
1941	2,132.0	3,708.1	1,037.9	6,878.0	5,799	118
1942	2,363.9	4,103.4	1,109.0	7,576.3	5,995	122
1943	2,488.0	4,608.3	974.7	8,071.0	6,143	125
1944	2,340.0	5,178.0	899.0	8,417.0	6,487	132
1945	1,975.0	5,212.0	954.0	8,141.0	6,339	129
1946	1,825.0	5,760.0	1,311.0	8,896.0	6,192	126
1947	2,909.0	7,941.0	1,634.0	12,484.0	6,880	140
1948	3,510.0	10,266.0	1,894.0	15,670.0	7,175	146
1949 (est.)	3,000.0	9,000.0	1,900.0	13,900.0	6,290	128

(G. A. Ro.)

Mineralogy. The occurrence in nature of the well-known nickel compound, $NiSO_4.6H_2O$, was reported by Clifford Frondel and Charles Palache and the name retgersite assigned to it as a mineral (*American Mineralogist*, vol. 34, 188–194). W. C. Smith, F. A. Bannister and M. H. Hey described cymrite, a new barium mineral, $BaAlSi_3O_8OH$, from the Benallt manganese mine, Rhiw, Carnarvonshire, Wales (*Mineralogical Magazine*, vol. xxviii, pp. 676–681).

The increased demand for single crystals, the success achieved in growing them in the laboratory, their properties and many uses were described in an illustrated article "Crystals" by Hans Jaffe (*Physics Today*, pp. 14–19, Sept. 1949).

The progress made during the decade in producing synthetic gem materials in the United States was discussed in "American Synthetic Crystals—Sapphire to Titania" by A. K. Seemann (*Gems and Gemology*, vol. vi, pp. 151–159) and by C. H. Moore, Jr., in "Formation and Properties of Single Crystals of Synthetic Rutile" (*Mining Engineering, Mining Transactions*, pp. 194–199, June 1949).

During the year the following books became available. *Story of Jade* by Herbert P. Whitlock and Martin Ehrmann. This was an important contribution to our knowledge of jade. It has 179 black and white illustrations and four full colour plates of notable jade objects. The third edition of E. S. Dana's *Minerals and How to Study Them*, which is well adapted to the needs of beginners and amateurs, was revised by C. S. Hurlbut, Jr. The first edition appeared in 1895. The revised and enlarged 10th edition of G. F. Herbert Smith's *Gemstones* was widely used. *Crystals and X-Rays* by Kathleen Lonsdale was intended for all interested in crystallographic science. *Probleme der Naturwissenschaften* by Paul Niggli (Basel) was an attempt to explain the concept, and its development, of the nature of crystals and minerals. *Gesteine und Minerallagerstätten* by Paul and Ernest Niggli (Basel) presented a modern treatment of rocks and mineral deposits. *Das Geheimnis der Kristallwelt* by H. Tertsch (Vienna) described in detail the history and development of crystallography and mineralogy.

Notable progress was made in Germany in re-establishing journals which were discontinued during the war and in launching new ones. During 1949 the leading German journal devoted to gemology and jewellery, *Die Deutsche Goldschmiedezeitung*, which ceased publication in 1943, began to reappear. Moreover, two new journals were launched: *Edelsteine und Schmuck* was published at Idar-Oberstein, recognized as a leading gem centre for more than four centuries, and *Achat*, devoted to mineralogy, emology and jewellery, was issued at Hamburg.

The greatly increased application since 1939 of X-ray analysis nd electron diffraction to the study of crystal structure and the olid state led to the formation of the Crystallographic Society f America and the American Society for X-ray and Electron)iffraction. As the functions and memberships of these socie- es overlapped, it was voted to merge them, effective Jan. 1, 950. The new organization would be known as the American rystallographic association.

The Washington A. Roebling medal was awarded to Her- ert E. Merwin of Washington, D.C., by the Mineralogical So- iety of America at its annual meeting at El Paso, Tex., Nov. 1, 1949. For 40 yr. Merwin had been on the staff of the geo- hysical laboratory of the Carnegie institution. He had con- ributed extensively to the advancement of mineralogy and etrography. (*See* also MINERAL AND METAL PRODUCTION AND RICES.)

(E. H. KR.)

Iining: *see* MINERAL AND METAL PRODUCTION AND PRICES. *ee* also under separate minerals.

Iinnesota. A north central state of the United States, popularly known as the "Gopher" or "North tar" state. Area: 84,068 sq.mi., including 4,059 sq.mi. of water. he population on July 1, 1949, was estimated at 2,977,000 by ne U.S. bureau of the census, representing an increase of 6.6% ver the 1940 population of 2,792,300.

Approximately 50% of the population lives in cities of 2,500 r over. The principal cities are St. Paul, the capital city (pop. 940 census, 287,736), Minneapolis (492,370), and Duluth 101,065). Native-born whites in 1940 numbered 2,474,078; oreign-born whites, 294,904; and Negroes, 9,928.

History.—The principal elective officials of the state in 1949 ere: governor, Luther W. Youngdahl; secretary of state, Mike Iolm; treasurer, Julius A. Schmahl; auditor, Stafford King; nd attorney general, J. A. A. Burnquist.

The 56th session of the Minnesota legislature, acting on the ecommendation of Governor Youngdahl, enacted what was aid to be the first law in any state recognizing mental illness s a sickness. The principle of this approach in mental health eatment is the complete elimination of restraints in treating ental cases.

Ralph Rossen was appointed commissioner of mental health. ppropriations provided for 1,200 additional doctors, nurses, sychiatric aides, therapists, social workers, dietitians, etc., to- ether with $100,000 for research as well as numerous other upplementary facilities and services.

Education.—State aid to local schools, including income from trust nds and fixed income tax allotments, was expected to amount to $97,- 52,200 for the biennium that began July 1, 1949. Total public school penditures for the 1948–49 school year were about $109,509,841, com- ared with $91,791,740 for the 1947–48 school year. In 1948–49 Minne- ta had 7,952 elementary schools, 642 secondary schools, 5 public state achers colleges and 10 junior colleges. Enrolment was 329,124 with ,992 teachers in elementary grades; 167,421 with 8,084 teachers in the condary grades; 1,854 with 144 teachers in junior colleges; 11,267 ith 249 teachers in adult education classes; and 220 with 16 teachers teacher-training departments. Dean M. Schweickhard was commissioner education.

Social Insurance and Assistance, Public Welfare and Related Programs. -The average grant per case in aid to dependent children rose $1.18 om Nov. 1948 to Nov. 1949. During the same period old-age assistance nd aid to the blind per recipient increased 39 cents and 94 cents, respec- vely. General relief totalled $4,160,211 during the year ending June 30, 949, with the number of cases averaging 7,363, and $30,380,983 was ent on old-age assistance to an average of 54,717 recipients. A total of ,972,791 was expended in aid to 18,228 dependent children in 7,164 milies. An average of 1,052 persons shared in the total allowance of 588,582 in aid to the blind. In 1949 the legislature increased the old- ge assistance maximum maintenance grant from $50 to $55; removed e limits of amounts to be granted for dependent children; and enabled unty welfare boards to place wards of the director of social welfare in loptive homes or for foster care.

The number of workers covered by unemployment insurance during 1948 was 815,000. In 1949 an estimated $13,600,000 in benefit payments was made under the Unemployment Compensation law. Payments under the Servicemen's Readjustment Allowance program for unemployment in 1949 were estimated to be $8,920,000.

Communications.—At the end of 1949, Minnesota had a total of 121,002 mi. of highway including 11,902 mi. of state trunk highways, 101,172 mi. of other highways and 7,928 mi. of city streets. Expenditures of the state highway department, including disbursements for construction, maintenance, right of way purchases, equipment, traffic control and safety during the fiscal year ending June 30, 1949, were $42,294,906, as compared with $37,001,721 for the year ending June 30, 1948. There were 22 railroads operating on Dec. 31, 1949, having a total main line mileage of 8,353.

The state had 76 municipally owned and 43 privately owned commercial airports, as well as 16 licensed commercial seaplane bases and 194 private landing strips. Six scheduled air carriers provided service to nine municipalities.

Banking and Finance.—Resources of Minnesota banks on July 1, 1949, were approximately .05% lower than on July 1, 1948. The 499 state banks, 1 mutual savings bank and 4 trust companies had deposits of $961,451,000 and resources of $1,032,144,000, compared with deposits of $974,678,000 and resources of $1,039,019,000 on July 1, 1948. The 179 national banks had deposits of $1,912,420,000 and resources of $2,057,297,000 on July 1, 1949, compared with deposits of $1,929,925,000 and resources of $2,064,939,000 on July 1, 1948. The state had 41 state building and loan associations on July 1, 1949, with resources of $86,860,113, as compared with resources of $77,718,000 on July 1, 1948. The 30 federal savings and loan associations had resources of $220,831,557 on July 1, 1949, compared with resources of $198,608,000 on July 1, 1948.

Total operating disbursements of the state government (exclusive of public debt redemption, stores for resale, annuities and pensions, land and interest in land) amounted to $222,478,172 for the fiscal year ended June 30, 1949, as compared with $245,522,456 for the fiscal year ended June 30, 1948. The state's total indebtedness in bonds and certificates of indebtedness on June 30, 1949, was $51,703,425, a reduction of $7,112,658 since June 30, 1948. The four principal trust funds of the state, income of which is devoted largely to schools, reached $177,282,747 on June 30, 1949.

Agriculture.—Butter production in 1949 was 222,657,000 lb. For the calendar year 1948, cash receipts from farm marketings totalled $1,332,313,000, with $913,718,000 from livestock and livestock products and $418,595,000 from crops.

Leading Agricultural Products of Minnesota

Crop	1949	1948	Average 1938–47
Corn, all, bu.	248,512,000	272,055,000	203,090,000
Oats, bu.	178,272,000	206,338,000	163,830,000
Barley, bu.	25,464,000	34,132,000	35,477,000
Wheat, all, bu.	20,058,000	18,447,000	24,066,000
Flaxseed, bu.	16,280,000	19,102,000	12,053,000
Potatoes, bu.	16,000,000	17,280,000	18,648,000
Hay, all, tons	5,021,000	5,145,000	6,522,000

Manufacturing.—Employment in manufacturing industries totalled 184,951 in Oct. 1949, 6.8% below Oct. 1948. Latest census reports indicated 4,567 manufacturing establishments to be operating in Minnesota in 1947, as compared with 4,008 in 1940.

Mineral Production.—An estimated 57,000,000 tons of iron ore were shipped from Minnesota during 1949, compared with 69,108,000 tons during the calendar year 1948.

FILMS OF 1949.—*Iron Mining* (Academy Films). (L. W. MH.)

Mint, United States: *see* COINAGE.

Minton, Sherman (1890–), was born on Oct. 20 in Georgetown, Ind. He attended Indiana university and Yale, where he received a law degree in 1916. He began the practice of law in New Albany, Ind., but interrupted it to serve in the army in World War I. After that war he resumed his law practice in Indiana and for some years in Miami, Fla. In 1933 he became public counsellor of Indiana, and next year became a Democratic candidate for the U.S. senate. He was elected and served from 1935 to 1941, becoming during his term chairman of the Senate Lobby committee. Defeated for re-election, he was appointed administrative assistant to Pres. F. D. Roosevelt on Jan. 8, 1941, and in May of that year was nominated judge of the U.S. circuit court of appeals for the 7th circuit. He served on this bench until Sept. 15, 1949, when he was appointed to the U.S. supreme court by Pres. Harry S. Truman.

Miquelon: *see* FRENCH UNION.

Missions, Foreign (Religious). For Christian foreign missions the year 1949 was one of mingled distress and growth. In a number of lands the political situation brought great difficulty and even reverses. In Burma civil strife was a handicap to missions of all branches of the church. This was especially true because the fighting was particularly acute between the Burmese and the Karens and the latter, the largest minority group in the country, had a high percentage of Christians. The instability in Korea was reflected in the Christian communities, and in the northern part of the land, under Communist control, missions and the churches found conditions even more adverse than in 1948. In China the advance of communism brought very marked hardship. The attitude of the Communist authorities varied somewhat from section to section and from city to city. In general Roman Catholics, because of the pronounced anti-Communist policy of the Vatican and the hierarchy, suffered more than Protestants, but the latter found the new conditions by no means easy. Some church property was occupied or seized outright by the Communists, and the heavy taxation imposed by the new regime proved burdensome. Many missionaries returned to their home countries and few new missionaries could be sent. Both missionaries and Chinese Christians gave serious attention to formulating radically new methods which would comply with the demands of the Communist regime, so far as that could be done without compromising Christian principles. In some parts of Viêt-Nam Roman Catholic missions suffered severely.

Yet in several lands marked advance was witnessed. This was especially notable in Japan. The Japanese were still, as they had been since 1945, very open-minded to Christianity. To meet the opportunity many new missionaries entered the country. The majority of these were Roman Catholic, but a large proportion were Protestant. The former were predominantly from Canada and the United States and the latter almost entirely from those two countries, especially the United States. Protestants began, with Japanese and U.S. funds, the International Christian university near Tokyo. In Africa, in spite of the acute racial tensions in the Union of South Africa, Christians maintained their increase in numbers south of the Sahara and reinforcements came to the missionary body from both Roman Catholics and Protestants. The Philippines saw rapid reconstruction in the enterprises of both Roman Catholics and Protestants.

Missions in India experienced considerable inconveniences under independent India and Pakistan, but in general the Christian communities continued to grow. In Latin America the rising strength of the Protestants, or Evangelicals as they preferred to be called, was made vivid by a conference of several denominations from the entire area held in Buenos Aires in July under the direction of Latin Americans. Some missionaries were present but Protestantism had become so well rooted that these were now auxiliary rather than dominant. More and more Roman Catholic priests from the United States went to Latin America to assist their church in that area.

(K. S. L.)

Mississippi. A southern state of the U.S. admitted to the union in 1817, Mississippi is popularly known as the "Magnolia state"; area, 47,716 sq.mi. (47,420 sq.mi. land and 296 sq.mi. water); pop. (1940): 2,183,796; capital: Jackson (62,107). Other cities: Biloxi (17,475); Greenville (20,892); Gulfport (15,195); Hattiesburg (21,026); Laurel (20,598); Meridian (35,481); Natchez (15,296); Vicksburg (24,460).

Of the state's population in 1940, 432,882, or 19.8% were

CHRISTIAN CONVERT of a Moravian mission in Ladakh, India, teaching a group of Ladakhi schoolboys

the knowledge that you want
to acquire learn a portion
of it everyday

ɑan; there were 1,106,327 whites; 1,074,578 Negroes; 2,177,- native-born; 6,472 foreign-born. On July 1, 1949, the U.S. reau of the census estimated the civilian population of the te at 2,130,000.

History.—For 1948–52 the chief elected officers of the state re: governor, Fielding L. Wright; lieutenant governor, Sam mpkin; secretary of state, Heber A. Ladner; attorney gen- l, Greek L. Rice; state tax collector, Mrs. Thomas L. Bailey; te treasurer, Robert W. May; state auditor, Carl N. Craig; te superintendent of public education, J. M. Tubb.

n the year 1949 an extraordinary session of the state legisla- e was convened at the call of the governor for the purpose considering a long-time state road building program. The spe- l session failed to enact adequate legislation, but a plan was lved for consideration by the regular biennial session of the islature convening in Jan. 1950—a plan for financing a 11,- -mi. state aid rural road (farm-to-market) program and the oo-mi. state highway system.

The new road system, as proposed, would be financed in t by an increase of two cents a gallon on the six-cent gas .

ducation.—In 1948–49 there were 1,165 white elementary schools in ssissippi and 3,159 Negro elementary schools, a total of 4,324. The olment in elementary schools was 462,215, of whom 214,248 were tes and 247,967 Negroes. The state had 513 white high schools and approved Negro high schools. The enrolment of these approved high ools plus enrolments in nonaccredited schools gave a total enrolment 79,290 in 1948–49. There were 9,410 white elementary and high ool teachers (including superintendents and principals) and 6,469 ro elementary and high school teachers (including superintendents and cipals), a total of 15,879 teachers. The total enrolment in white nentary and high schools was 274,417; in Negro elementary and high ools. 267,088.

ocial Insurance and Assistance, Public Welfare and Related Programs.— m July 1, 1948, to June 30, 1949, the state department of public fare paid $10,880,452 to 64,109 recipients of old-age assistance; 5,836 to 2,749 recipients of aid to the blind; and $2,265,826 for aid 9,918 families for 27,125 dependent children. Special child-welfare kers were assigned to 16 county departments of public welfare, to umbia Training school and to Oakley Training school. There is a ning unit in one county to which child-welfare workers are assigned special training before being assigned to a county unit. The state- nty program of foster boarding care for children was augmented.

Through its division for the blind, the department maintained a state- nced program of sight conservation, restoration and services and con- ed its program of training adult blind persons to work on factory- e sewing machines. The division continued to serve as the channel for eral funds for vocational rehabilitation of blind civilians.

ommunications.—In 1949 the state maintained 7,139.8 mi. of high- s. In 1949 the counties maintained approximately 53,983 mi. In the al year 1948–49 the state maintenance expenditures were estimated $3,952,662.76.

The total mileage of railroads in the state on Dec. 31, 1947, was 24.02.

anking and Finance.—On June 30, 1949, there were 179 state banks in ssissippi, with 22 branch banks and 34 branch offices; there were 24 ional banks. The resources of the state banks were $566,737,924.42, the total deposits were $527,844,592.49; the resources of the national ks were $213,945,251.51, and the total deposits were $200,905,289.26.

The balance in the general fund account as of Dec. 31, 1949, was ,772,977.34. The special fund account as of Dec. 31, 1949, was $13,- ,626.20. On Dec. 31, 1949, the full faith and credit debt of the state Mississippi was $10,752,500; outstanding highway bonds (payable n gasoline tax) amounted to $66,224,000 on Dec. 31, 1949, making otal debt of $76,976,500.

griculture.—The 1945 census reported 265,528 farms, with 19,616,533 in farms. In 1949 cropland harvested was 6,130,000 ac. The 1948 eipts from marketings were $532,541,000, of which $399,567,000 were n crops and $132,974,000 from livestock products; the value of farm ducts consumed in farm households was $135,724,000.

Table I.—*Leading Agricultural Products of Mississippi*

Crop	1949	1948	Average 1938–47
on (500-lb. bales)	1,490,000	2,353,000	1,588,000
onseed, tons	596,000	912,000	671,000
, bu.	47,725,000	53,544,000	43,506,000
, tons	988,000	1,011,000	1,099,000
et potatoes, bu.	3,990,000	4,300,000	5,499,000
ar-cane syrup, gal.	2,030,000	2,890,000	3,082,000
o syrup, gal.	700,000	1,445,000	1,683,000
ns, lb.	7,900,000	9,500,000	6,146,000
eans, bu.	1,674,000	2,394,000	998,000

anufacturing.—The value of all manufactured products in Mississippi the year 1946 was $555,727,000. The amount of wages paid in 1947 to persons employed in all industries employing eight or more persons amounted to $310,320,000, as against $234,000,000.00 for 1944 and $94,000,000.00 in 1939.

Mineral Production.—The total value of mineral production in 1948, including natural gas, sand and gravel and other mineral products, was $112,663,013.40.

Table II.—*Principal Mineral Products of Mississippi*

Mineral	Value, 1948	Value, 1947
Natural gas	$ 2,289,136	$ 1,889,718
Sand and gravel	2,744,217	2,493,175
Petroleum	108,732,500	61,962,098
Other mineral products	420,000	561,000

On Dec. 31, 1948, there were approximately 1,355 producing oil wells in the state. The value of petroleum for the year 1948 was $108,732,500, and for 1949 it was $94,380,000. (A. B. Bu.)

Missouri. A west north central state of the U.S.A., Missouri was admitted to the union in 1821; it is popularly known as the "Show Me state." Area 69,674 sq.mi. of which 404 are water. Pop. (1940) 3,784,664 (51.8% urban, 48.2% rural); 3,425,062 (90.5%) native white, 114,125 (3%) foreign-born white and 244,386 (6.5%) Negro. The bureau of the census estimated that on July 1, 1949, the population of th estate was 3,935,000. Capital, Jefferson City (1940 census) (24,268). Largest cities: St. Louis (816,048), Kansas City (399,178), St. Joseph (75,711), Springfield (61,238). On Jan. 1, 1949, the population of St. Louis was estimated at 905,000.

History.—The 65th general assembly, with Democratic majorities in both houses, convened on Jan. 5, 1949, and adjourned *sine die* on Jan. 14, 1950. It set a record in its appropriation of about $604,000,000 for operation of the state government during the 1949–51 biennium. It repealed the Madison act, which prohibited jurisdictional strikes, secondary boycotts and strikes against the state government; extended absentee voting privileges to all Missouri citizens; provided for the imprisonment of sexual perverts molesting children; and authorized an increase in the state gasoline tax from two cents a gallon to four cents, subject to a referendum at a special election on April 4, 1950. Also, in co-operation with the state of Illinois, the legislature set up a bi-state development agency for the St. Louis area.

The major state officers (1949), all Democrats, were: Forrest Smith, governor; James T. Blair, Jr., lieutenant governor; Walter H. Toberman, secretary of state; W. H. Holmes, auditor; M. E. Morris, treasurer; James E. Taylor, attorney general.

Education.—For the school year ending June 30, 1949, the public school system consisted of approximately 6,728 elementary schools, with 491,342 pupils and 17,172 teachers; 736 secondary schools, with 143,947 pupils and 6,481 teachers; 9 junior colleges, with 5,038 students and 269 teachers. The state expenditure for education during that year amounted to $39,927,412. Hubert Wheeler was state commissioner of education.

Under the G. I. Bill of Rights and the Vocational Rehabilitation act for disabled veterans, 50,732 veterans of World War II were enrolled in schools and colleges in the state, 16,478 were receiving farm training, and 9,432 job training in Dec. 1949.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the year ending June 30, 1949, unemployment insurance totalled $17,044,949, paid to 105,174 persons. In Dec. 1948, 22,307 received payments and in Dec. 1949, the number was 37,315. For the year ending June 30, 1949, old-age assistance amounted to $59,336,897, aid to dependent children $13,848,585, general relief $5,344,684 and blind pensions $1,191,931. In June, 1949, 123,883 persons received old-age assistance, 23,762 families (60,549 children) aid to dependent children, 36,163 persons general relief, 2,766 persons blind pensions. During the year ending June 30, 1949, the state penitentiary had an average of 2,861 inmates per day, the reformatory 273, and the expenditures for these institutions amounted to $1,962,800.

Communications.—On Dec. 31, 1948, Missouri had 17,552 mi. of state highways and 94,858 mi. of rural roads. During 1948 the state highway department spent $49,623,748 (state and federal funds), of which $25,087,629 was for construction and $11,464,381 was for maintenance. In 1946 railroad mileage totalled 6,832 mi. There were 1,108,898 telephones in use on Dec. 31, 1949.

Banking and Finance.—On June 30, 1949, Missouri had 492 state banks, with deposits of $2,054,133,000 and resources (loans and investments) of $1,895,676,000; 79 national banks, with deposits of $1,216,017,000 and resources (loans and investments) of $1,166,027,000; 159 savings and loan associations, with resources of $272,450,542.

During the fiscal year ending June 30, 1949, the receipts of the state treasury totalled $198,555,696; disbursements $252,238,749, of which $7,789,496 was from the Post War Reserve fund. The state debt on July 1, 1948, was $49,000,000 and on June 30, 1949, $44,000,000.

Agriculture.—During 1948 cash income from crops and livestock was $1,085,717,000, and cash income from government payments was $6,398,000. The value of Missouri's 1948 crops was $636,359,000 and the value of the 1949 crops, harvested from 14,072,100 ac., was estimated at $529,343,000. The 1949 production of hay and soybeans set new records but unfavourable weather reduced yields of cotton and oats.

Table I.—*Leading Agricultural Products of Missouri*

Crop	1949	1948	Average, 1938-47
Corn, bu	173,963,000	201,110,000	128,558,000
Winter wheat, bu	35,028,000	39,270,000	21,680,000
All hay, tons	5,095,000	4,803,000	4,012,000
Cotton, bales	460,000	506,000	356,000
Oats, bu	43,248,000	48,592,000	45,128,000
Soybeans, bu.	17,997,000	15,900,000	6,534,000

Manufacturing.—The number of persons employed in Missouri's manufacturing industries in 1947 was 327,515, and salaries and wages totalled $827,184,000. The value added by manufacture of products in 1947 totalled $1,623,145,000, compared with $581,804,000 in 1939, when the previous U.S. biennial census of manufactures was taken.

Mineral Production.—In 1948 the value of Missouri's mineral production was $113,506,000, an increase of 5% over 1947. The quantity of lead produced in 1948 was 23% less than in 1947, and the quantity of zinc 62% less.

Table II.—*Principal Industries of Missouri*

Industry	Value added by manufacture 1947	1939
Food and kindred products (including malt liquors, meat packing, etc.)	$331,753,000	$128,606,000
Transportation equipment (including motor vehicles)	173,131,000	40,558,000
Apparel and related products	130,549,000	43,127,000
Chemicals and allied products (including drugs and medicines)	129,257,000	53,208,000
Leather and leather products (including footwear)	117,333,000	56,958,000
Printing and publishing industries	116,327,000	49,733,000
Fabricated metal products	112,587,000	35,353,000
Machinery (except electrical)	109,412,000	23,519,000
Electrical machinery	89,212,000	28,299,000

Table III.—*Principal Mineral Products of Missouri*

Mineral	Value, 1948	Value, 1947
Lead	$36,619,104	$38,086,848
Cement	17,911,257	15,066,390
Bituminous coal	15,779,000	14,093,663
Stone (exclusive of sandstone)	12,320,220	11,195,993
Clay (raw and heavy clay products)	10,623,128	8,174,157
Lime	8,998,691	7,006,426
Sand and gravel	4,197,922	4,193,474

(R. P. Br.)

Mohammedanism: *see* Islam.

Molybdenum: *see* Mineral and Metal Production and Prices.

Monaco. A sovereign principality on the Mediterranean coast, 9 mi. E. of Nice, Monaco is bounded on all land sides by the French *département* of Alpes Maritimes. Area: 0.6 sq.mi. Pop. (1946 census): 19,242 including 1,975 Monacans and 10,522 French.

Ruler: Prince Rainier III; minister of state (appointed July 12, 1949): Jacques Rueff.

History.—Prince Louis II, who died on May 9, 1949, was succeeded by his grandson, Rainier (b. May 31, 1923), son of the hereditary Princess Charlotte-Louise-Juliette and of Count Pierre de Polignac.

Social changes of the postwar period were felt in Monaco. The casino of Monte Carlo, the financial mainstay of Monaco, saw its private rooms shut and the roulette players risking only modest sums. To attract tourists the casino broke its tradition by introducing in the summer of 1949 the U.S. dice game of craps.

A discussion was initiated with the French government with a view to "liberalizing" the French-Monacan financial agreement of April 14, 1945, by which the principality was submitted to strict fiscal and exchange control by the French authorities.

Finance.—Budget (1947–48): revenue 519,500,000 fr., expenditure 496,900,000 fr. (Nov. 14, 1949: 1 franc=0.2857 U.S. cents.)

Monetary Units: *see* Exchange Control and Exchange Rates.

Mongolian People's Republic (formerly Outer Mongolia). A vast tableland bounded north by Siberia, east by the Mongol-populated fringes of the Manchurian provinces of China, west by Sinkiang (part of the frontier being in dispute), south by the Mongol-populated fringes of the Chinese provinces of Ninghsia, Suiyuan, Chahar and Jehol. The Mongolian People's Republic has an area of 580,158 sq.mi. Population, according to soviet figures published in 1948, but cited from data of 1941: 850,000. Capital: Ulan Bator, formerly Urga (pop., 1941 est., 70,000). Religion: Lama-Buddhism, followed by the majority of the population, though the properties of the great temples and monasteries, formerly untaxed, have been appropriated by the state, and the "reincarnation" of "Living Buddhas" has been forbidden. Chairman of the presidium of the Little Hural, Bumatsende; prime minister and commander in chief: Marshal Choi-Balsan.

History.—This soviet-dominated people's republic celebrated during 1949 the 28th anniversary of its national revolution and the 25th anniversary of the foundation of the existing regime.

The anniversary of the foundation of the Mongol People's Revolutionary (Communist) party in 1921 was the occasion of a solemn meeting at Ulan Bator on July 11, 1949. The main speakers were Y. Tsedenbal, secretary general, and Choizhamts, secretary of the central committee of the Mongolian People's Revolutionary party.

More important still was the celebration of the anniversary of the adoption by the first Great Hural or people's assembly of the Mongolian constitution (Nov. 26, 1924). On this occasion Joseph Stalin (*q.v.*) sent a message to Marshal Choi-Balsan congratulating the Mongolian people for having liquidated the age-old backwardness of the Mongolian people. Choi-Balsan replied by proclaiming that the Mongolian people owed their freedom and independence and all their achievements in state, economic and cultural construction of their country to "the many-sided and disinterested assistance of the great soviet people."

At a big meeting held at Ulan Bator on Nov. 25, Surunzhab, deputy prime minister, reported on progress achieved in 25 years. Land cultivation was 173 times larger than in 1927; the arats (peasants) of Mongolia had organized 121 collective stock farms; livestock (horses, cattle and sheep) numbered in 1949 twice as many head as in 1924; extraction of coal (which began in 1915) had increased 127 times and by 1949 the total number of industrial establishments was 252 times greater than a quarter of a century earlier; by the end of 1949 there were in the country about 1,000 km. of motor roads and on Nov. 7 the first railway line linking Ulan Bator to the Trans-Siberian railway was inaugurated. There were also big achievements in the cultural field: illiteracy, for example, had been reduced to 55.4%.

In April 1949 Dango Surun Neydachin, secretary general of the Revolutionary Union of Youth of Mongolia, took part in the ninth congress of the Young Communist league in Moscow, U.S.S.R. Tsedenbal, secretary general of the M.P.R.P., was present in Moscow on Dec. 21 at the celebration of Stalin's 70th birthday. Together with other people's republics, Mongolia recognized the Communist Chinese People's republic (Oct. 9).

The application of Mongolia for United Nations membership, ready rejected in 1946 and 1947, was again opposed by the curity council in 1949: the U.S.S.R. and the Ukrainian S.S.R. ted for; Canada and China against; Argentina, Cuba, Egypt, ance, Norway, the United Kingdom and the United States stained.

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loniz, Antonio Caetano de Abreu Freire Egas 874–), Portuguese medical scientist, was born at Avanca, ortugal, Nov. 29. He was educated at the universities of oimbra and Bordeaux. Until 1911 he was a professor at oimbra and from 1911 was professor of neurology at Lisbon niversity. He served in the Portuguese parliament, in 1918 as minister in Madrid and in 1918–19 was minister of foreign fairs. He was a pioneer in the surgical treatment of mental sorders. In 1927 he invented cerebral angiography, a method f visualizing the blood-vessels of the brain and making it ssible to diagnose and locate cerebral tumours. On Oct. 27, 49, it was announced that he had been awarded, jointly with R. Hess (*q.v.*), the 1949 Nobel prize for physiology and edicine for his discovery of the therapeutic value of the pre- ontal leucotomy in the treatment of certain mental disorders.

lontana. A northwestern state of the United States, Montana is popularly known as the "Treasure state." and area 146,316 sq.mi.; water area 822 sq.mi.; pop. (1940): 59,456; principal cities (1947 pop. est.): Helena, the capital 8,000); Butte (39,000); Great Falls (38,000); Billings (32,- 00); Missoula (22,000); Anaconda (13,600); Bozeman (12,- 00); Kalispell (14,000). Of the total population in 1940, there ere 540,468 whites, of whom 484,826 were native-born and 5,642 were foreign-born. The urban population was 211,535, 37.8%. The Indian population numbered 16,841. The U.S. ensus bureau estimated the population as 521,000 as of July 1949.

History.—The 1949 legislative session equalized the financing Montana public schools on the county and state level and aced school transportation under the supervision of the state epartment of public instruction. Changes in the teacher retire- ent law, which included both the public schools and the uni- ersity system, provided for 5% deductions from teacher sala- es up to $5,000 and school district or state contributions of qual amount, which made possible maximum benefits of $2,500 er year after 35 years of service. Teachers would have a ested interest in the retirement benefits after 10 years of serv- e in the state. Retirement was made compulsory at 70 years age. Allocation of the $5,000,000 bond issue for new uni- ersity buildings, authorized by referendum 52 in 1948, was held by court action in 1949, following an attempt by a majority the state board of examiners to allocate this building fund nong the greater university units in a proportion drastically fferent from carefully considered recommendations made by e state board of education.

In the quadrennial election of 1948, John W. Bonner (Dem.) as elected governor with a Republican senate and a Demo- atic house of representatives. Other officers elected were aul Cannon (Dem.), lieutenant governor; Sam W. Mitchell Dem.), secretary of state; Arnold H. Olsen (Dem.), attorney eneral; Neil Fisher (Dem.), treasurer; John J. Holmes (Dem.), uditor; Mary M. Condon (Dem.), superintendent of public struction. Fisher died in Aug. 1949 and Governor Bonner opointed Alta E. Fisher to succeed her husband as state easurer.

Education.—There were 1,326 elementary schools in Montana in 1949, with an enrolment of 75,529 and a teaching staff of 3,526. There were 178 high schools with 25,339 students and 1,432 teachers. The net amount spent on the operation of these schools was $20,611,770. An additional $4,737,649 was spent for debt service and capital outlay, making a total expenditure of $25,349,419 for public school education in Montana in the 1948–49 school year.

Social Insurance and Assistance, Public Welfare and Related Programs.—Approximately 21,770 persons received public assistance in 1949. Grants totalling $9,844,781 were distributed as follows (figures in parentheses indicate the average number of recipients per month): old-age assistance (11,170) $6,426,682; aid to dependent children (5,430) $1,890,860; aid to needy blind (483) $293,042; subsistence (1,442) $553,031; medical care (620) $118,894; hospitalization (483) $518,846; burials (38) $43,426. Unemployment benefits of $1,932,360 were paid to 12,709 persons, an average of $16.77 per week for 10.88 weeks, or $182.50 per claimant. Correctional institutions with their average populations and total expenditures in 1949 were: Montana state prison, 458 inmates, $261,320; state industrial school, 92 inmates, $146,598; vocational school for girls, 30 inmates, $140,901.

Communications.—In 1949, the state highway commission maintained 8,841 mi. of highways, of which 1,053 mi. were unsurfaced. State highway expenditures in 1949 were $16,429,814, including federal aid. The local rural mileage system totalled 61,146 mi. The total number of airports listed on the U.S. aeronautical charts for Montana in 1949 was 116, not including 170 fields intermittently used by farmers and ranchers within the state boundaries. The railway mileage was 5,241. The number of telephones was 119,302.

Banking and Finance.—There were 111 banks in the state in 1949. The 39 national banks had total deposits of $270,984,000, and their total assets were $284,317,000. State banks had total deposits of $263,065,491, and their total assets were $275,576,605. There were 16 building and loan associations with assets of $23,419,118. For the fiscal year ending June 30, 1949, the net state revenue, all sources, was $72,913,076, and the expenditures were $59,183,843. The gross debt of the state on July 1, 1949, was $16,432,500 and the net debt $15,535,173.

Agriculture.—Crops harvested in Montana in 1949 were valued at approximately $223,000,000, a decline of $82,000,000 in comparison with 1948 but still 53% above the average crop value for the preceding decade. Crops were removed from 8,705,000 ac., about 309,000 ac. less than in 1948. The value of all livestock in Montana was estimated at $333,504,000 on Jan. 1, 1949, as compared with $289,381,000 one year earlier.

Table I.—*Leading Agricultural Products of Montana*

Crop	1949	1948	Average 1938–47
Wheat, bu.	64,080,000	93,718,000	64,160,000
Hay, tons	2,479,000	2,964,000	2,521,000
Barley, bu.	12,052,000	24,909,000	11,822,000
Sugar beets, tons	690,000	672,000	867,000
Oats, bu.	8,091,000	11,826,000	12,502,000
Potatoes, bu.	2,100,000	2,560,000	1,884,000
Alfalfa seed, bu.	148,000	87,000	113,400
Corn, bu.	1,572,000	3,781,000	2,991,000
Dry beans, 100-lb. bags	288,000	312,000	296,000
Flaxseed, bu.	363,000	1,410,000	1,296,000
Mustard seed, lb.	8,700,000	18,300,000	—
Seed peas, 100-lb. bags	80,000	108,000	374,000

Manufactures.—The total value added by manufacture (1947 census) in the 652 manufacturing establishments in Montana in 1947 was $92,258,000, as compared with $38,828,000 for 552 establishments in 1939. Reports of the state unemployment compensation commission show that during the two years 1948 and 1949 an average of 18,000 persons were employed in manufacturing in Montana, with total wages of $52,898,000 in 1948, and $57,250,080 in 1949. Official estimates compiled by the state unemployment service in co-operation with the U.S. bureau of labour statistics, listed total employment figures for all Montana industry aside from agriculture as 139,405 for the fiscal year 1948, and 145,000 for the 1949 fiscal year. For the year 1949, electrical power to a total of 2,840,116,000 kw.hr. was generated in the state.

Table II.—*Industrial Products in Montana*

Products	1948	1947
Cheese, lb.	2,818,390	3,731,781
Butter, lb.	8,636,503	9,177,000
Ice cream, gal.	2,721,302	2,690,000
Beet sugar, cwt.	1,879,766	2,524,421
Beer, bbl.	?	253,762
Gasoline, gal.	?	172,464,941
Electric power generated, kw.hr.	2,924,704,115	2,779,116,000
Lumber, bd. ft.	598,000,000	500,000,000

Mineral Production.—The 1949 yield of each of the five major metals in Montana was less than in 1948. The tonnage of ore treated was about 20% less than in 1948. The pronounced drop in base-metal prices, beginning in March and continuing far into the summer, was the principal factor responsible for this marked decline. The value of production during 1949 and 1948 is shown in Table III.

Crude oil production in Montana in 1949 amounted to 9,225,600 bbl., slightly under the 1948 production of 9,376,624 bbl. The coal tonnage

Table III.—*Principal Mineral Products of Montana*

Mineral	Value, 1949	Value, 1948
Copper	$21,216,900	$25,281,368
Zinc	13,011,200	15,719,270
Lead	5,668,350	6,591,138
Silver	5,423,968	6,272,648
Gold	1,634,500	2,558,185
Total value	$46,954,918	$56,422,609

produced was 2,733,364 in 1949 and 2,905,245 in 1948. Natural gas deliveries to pipe lines at wells in Montana fields were approximately 34,000,000,000 cu.ft. in 1949. (E. E. B.)

Montreal.

A city in the province of Quebec, Canada, first called Ville Marie, Montreal was founded in 1642. The population of the city proper, as estimated by *Lovell's Directory* (1949), was 1,420,057 and of greater Montreal 1,650,011.

The port of Montreal is the largest in Canada. Deep-sea vessel arrivals in 1949 (commercial) numbered 1,112, with a net tonnage of 4,113,327. The number of coastal or inland vessel arrivals (commercial) in 1949 was 3,198, with a net tonnage of 3,502,218. In addition, there were noncommercial vessels (such as warships, pleasure boats, yachts, etc.) numbering 170, with a net tonnage of 21,766.

During 1948 a total of 2,568,010 tons of cargo passed through the port, including 2,209,884 tons inward and 358,126 tons outward (exclusive of ballast, nonrevenue; bunkers; ships' stores; mail; and passengers' baggage).

The assessed value of real estate, as of April 30, 1949, was $1,442,837,390, of which $1,081,766,358 was taxable and $361,071,032 was exempt from taxation.

In 1949 building permits were issued for 4,717 new buildings, having a value of $78,246,306 and for 2,878 repairs, having a value of $10,943,625.

Bank clearings for 1949 were $13,911,260,296. (J. A. Ma.)

Montserrat: *see* Leeward Islands.

Mormons.

The building operations of the church continued at a high level during 1949; 61 meetinghouses were finished and dedicated, and construction of about 130 others was authorized.

The superintendency of the Deseret Sunday School union (the church Sunday school system) was reorganized during 1949—the centenary of the establishment of church Sunday schools in Utah. Approximate enrolment was 500,000.

The welfare program of the church was expanded by adding new welfare projects in various parts of the church. Missionary work continued to grow, with 4,883 missionaries in the field.

The Primary association of the church, with a total membership of 157,735 children under 12 yr. of age, was building a 70-bed hospital for crippled children, with completion scheduled for 1950.

(*See* also Church Membership.) (J. R. Cl.)

Morocco: *see* French Union; Spanish Colonial Empire.
Mortgages, Farm: *see* Agriculture; Farm Credit Administration; Farmers Home Administration.
Mortgages, Home: *see* Housing.

Moscow.

Although official figures were not available, it was generally thought that the capital of the Union of Soviet Socialist Republics and of the Russian Soviet Federated Socialist Republic had in 1949 a population of about 6,000,000. The building program had by no means kept up with the growth of the city, and, in spite of police efforts to relieve the town of any citizens who had no permit to live there and of legally laid down norms of accommodation, housing conditions were difficult, with two rooms as the average allowance for a family.

The main streets, which radiate like spokes of a wheel from the crenellated walls of the Kremlin with two ring-roads which link them, showed signs in surfacing, tree planting and laying-out of flowerbeds of the civic pride of the city soviet, though the side streets failed to live up to their standards. The crowds thronging the main shopping streets showed in the general shabbiness of their dress that in 1949 the Soviet Union still had a long way to go before the needs of all could be met. However, supplies of food and consumer goods in the shops maintained signs of improvement, queues decreased and, most important of all, prices of some classes of goods were lowered. The citizens of Moscow still had to struggle with congested public transportation, in spite of the continued efforts to improve it. But, whatever the rigours of life and travel, Muscovites enjoyed the consolation of good theatres, excellent concerts and what was considered by some to be the best ballet in the world. (R. Pos.)

Motion Pictures.

In 1949 the outlook of the U.S. motion-picture industry brightened perceptibly both at home and abroad. In neither instance were the results immediately convertible into cash profits—their chief value lay in the industry's psychological reactions.

Two factors may be given as responsible for the improved outlook: the conviction that U.S. pictures stood unrivalled in world popularity, and the success of the effort to decrease production costs without sacrificing the quality of product.

The industry's morale may be said to have reached its lowest point in Feb. 1949, when only 22 pictures were under production in Hollywood, compared with a normal figure of nearly twice that number. Then a reaction set in, which was reflected both in the statements of industry leaders and in studio announcements of future product. Viewed in terms of employment, the swing to a more optimistic viewpoint may be measured by the statistics for craft employees—12,000 at work in February, increasing to nearly 15,000 at year's end.

The industry had settled to the task of grappling with production expense. Under the sponsorship of the major studios, the Motion Picture Research council undertook continuous laboratory and experimental work. One development—a strippable adhesive for wallpaper used on sets, resulted in a yearly saving of $40,000 per studio. Reduction in production costs generally was estimated at 20% to 25%.

Box-office returns for 1949 were estimated at $1,375,000,000. The net profit estimate for seven major companies was $55,000,000, about the same as in 1948. Studio financial reports generally showed profits, though not always equal to those of 1948.

Many exhibitors in 1949 energetically pushed the sale of once lightly regarded side lines such as popcorn, candy and soft drinks at their theatres. At the convention of the Theatre Owners of America held in Los Angeles, Calif., in Sept. 1949, annual sales of such concessions in U.S. theatres were estimated at $500,000,000. This figure is equal to more than 25% of the highest annual box-office gross ever recorded.

In the world market situation, the U.S. industry was still beset by restrictive regulations and dollar shortage. Predictions of a drastic cut in returns from abroad did not materialize, however, and the 1949 foreign revenue of the distributing companies was estimated at 38% of gross film rentals, only a slight reduction from 1948. As their principal method of obtaining value from frozen funds, U.S. companies greatly expanded their foreign production activities. Italy, in particular, became a focal point for such operations, though England continued to gets its share of attention from U.S. producers. Several important pictures, such as *Stromboli* and *Deported,* were filmed in Italy during the year.

Devaluation of the pound, followed by similar currency action by countries in the British economic orbit, decreased the value of blocked funds of U.S. film companies and of their potential future earnings.

At the end of 1949 the long U.S. government antitrust action

ward winners among the films and players
hosen by the Academy of Motion Picture Arts
nd Sciences for highest achievement in 1949

bove: SCENE from *The Champion*, awarded for the best achieve-
ent in film editing. Film editor: Harry Gerstad

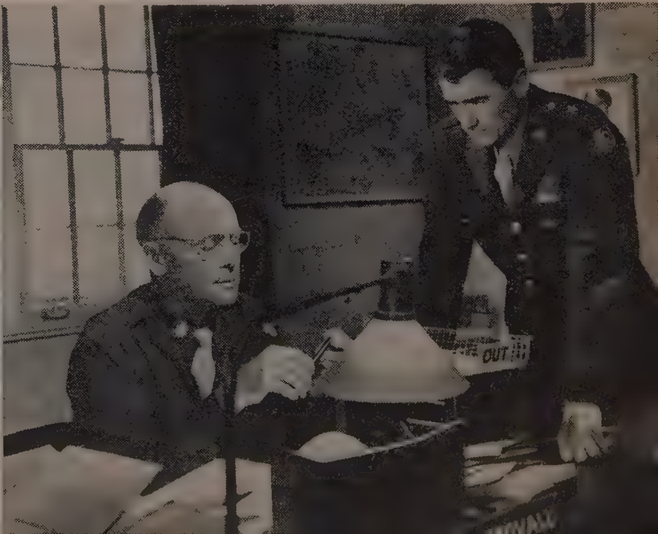
elow: Left to right: LINDA DARNELL, ANN SOTHERN and
eanne Crain in a scene from *Letter to Three Wives*, awarded for
st direction and best screen play, both by Joseph L. Mankiewicz

Above: BRODERICK CRAWFORD (left) and Mercedes McCambridge in a scene from *All the King's Men*, named the best picture of 1949. Broderick Crawford was also named the best actor of the year and Mercedes McCambridge the best supporting actress

Below: OLIVIA DE HAVILLAND was chosen best actress of the year for her title role in *The Heiress*. The film was also awarded first honours for art direction and costume design in black and white and for its musical scoring

low: SCENE from *Battleground*, awarded for the best cinematography and for the
best story and screen play" (both written by Robert Pirosh)

Below: DEAN JAGGER (left), chosen the best supporting actor of the year for his performance in *Twelve O'Clock High*. The film was also awarded for the best sound recording of the year



seeking the divestiture of exhibition from producer-distributor interests had not reached a final settlement. However, Paramount followed RKO in arriving at a consent decree embracing such terms. Warner Bros., Loew's (Metro-Goldwyn-Mayer) and 20th Century-Fox continued to seek mitigation of the divorcement demand.

Two producing companies fell by the wayside during the year. Beset by financial difficulties, Eagle-Lion Films suspended production indefinitely at its Hollywood studios after about four years of operation. The company, officials said, would continue in business but only as a distributor of films made by foreign or independent producers.

At about the same time, David O. Selznick, one of the industry's leaders for many years and generally regarded as one of its most distinguished producers, closed his studio and disbanded his producing organization.

The Production Code administration in 1949 approved 362 U.S. features and 58 foreign features, a total of 420 (1948—394 U.S., 41 foreign, a total of 435).

Some competition was felt by film theatres in television centres, but not enough to register on a national scale. Film companies conducted experiments with large-screen theatre television. Late in 1949 Columbia announced a program of short subjects for television.

The outstanding development in production trend in 1949 was concern with racial questions, following previous emphasis upon anti-Semitism. The situation of the Negro in the U.S. was dealt with in such films as *Pinky*, *Intruder in the Dust*, *Lost Boundaries* and *The Home of the Brave.*

A number of the year's pictures dealt with war—*Battleground, Twelve O'Clock High, The Hasty Heart, Task Force, Sands of Iwo Jima.* Even the two highly successful comedies, *I Was a Male War Bride* and *Francis,* had war backgrounds.

Other outstanding productions were *Jolson Sings Again, The Heiress, All the King's Men, Champion, They Live by Night, Samson and Delilah, The Stratton Story.* Some of the outstanding musical productions were *The Barkleys of Broadway, Dancing in the Dark* and *On the Town.*

New faces to attract the most attention on the screen in 1949 were Kirk Douglas in *Champion* (which also introduced a new independent producer, Stanley Kramer), John Derek, Mercedes McCambridge, Keefe Brasselle and Richard Todd. Broderick Crawford, while not a newcomer, was acclaimed for his work in *All the King's Men.*

The New York film critics made the following selections for 1949: best picture of the year, *All the King's Men;* best foreign-language picture, *The Bicycle Thief;* best actress, Olivia de Havilland; best actor, Broderick Crawford; best director, Carol Reed, for *The Fallen Idol* (English).

Leading box-office stars of 1949, according to the annual poll of *Motion Picture Herald,* were Bob Hope, Bing Crosby (who had placed first in the five immediately preceding polls), Bud Abbott and Lou Costello, John Wayne, Gary Cooper, Cary Grant, Betty Grable, Esther Williams, Humphrey Bogart, Clark Gable.

The Academy of Motion Picture Arts and Sciences announced in March 1949 the following awards for 1948 (*see* accompanying page of photographs for 1949 winners):

Best picture, *Hamlet*, J. Arthur Rank-Two Cities, Universal-International (British); performances: actor, Laurence Olivier in *Hamlet,* actress, Jane Wyman in *Johnny Belinda*, Warner Bros., supporting actor, Walter Huston in *Treasure of Sierra Madre*, Warner Bros., supporting actress, Claire Trevor in *Key Largo*, Warner Bros.; best direction, John Huston for *Treasure of Sierra Madre;* writing (screen play), John Huston for *Treasure of Sierra Madre*, writing (motion picture story), Richard Schweizer and David Wechsler, for *The Search*, Praesens Film, M-G-M (Swiss); best art direction: black and white, Roger K. Furse, for *Hamlet*, colour, Hein Heckroth for *The Red Shoes*, J. Arthur Rank-Archers, Eagle-Lion (British); best cinematography: black and white William Daniels for *The Naked City*, Mark Hellinger Productions, Inc., Universal-International, colour, Joseph Valentine, William V. Skall and Winton Hoch for *Joan of Arc*, Sierra Pictures, Inc., RKO Radio; best sound recording, Thomas T. Moulton for *The Snake Pit*, 20th Century-Fox; short subjects: cartoon, *The Little Orphan*, M-G-M (Fred Quimby, producer), one-reeler, *Symphony of a City*, 20th Century-Fox (Edmund H. Reek, producer), two-reeler, *Seal Island*, Walt Disney, RKO Radio (Walt Disney, producer); best film editing, Paul Weatherwax for *The Naked City;* best scoring of a musical picture, Johnny Green and Roger Edens for *Easter Parade*, M-G-M; best scoring of a dramatic or comedy picture, Brian Easdale for *The Red Shoes;* best original song, "Buttons and Bows" from *The Paleface*, Paramount (music and lyrics by Jay Livingston and Ray Evans); best special effects: visual, Paul Eagler, J. McMillan Johnson, Russell Sherman and Clarence Slifer, for *Portrait of Jennie*, Selznick Studio, audible, Charles Freeman and James G. Stewart, for *Portrait of Jennie;* best interior decoration: black and white, Carmen Dillon for *Hamlet*, colour, Arthur Lawson for *The Red Shoes;* costume design: black and white, Roger K. Furse for *Hamlet*, colour, Dorothy Jenkins and Karinska for *Joan of Arc;* best documentaries: short subject, *Toward Independence*, U.S. army, feature, *The Secret Land*, U.S. navy, M-G-M (O. O. Dull, producer); Irving G. Thalberg Memorial award, Jerry Wald; foreign-language film award, *Monsieur Vincent* (French); special awards: Ivan Jandl, for the outstanding juvenile performance of 1948 in *The Search*, Sid Grauman, master showman, who raised the standard of exhibition of motion pictures, Adolph Zukor, for his services to the industry over a period of 40 years, Walter Wanger, for distinguished service to the industry in adding to its moral stature in the world community by his production of the picture *Joan of Arc;* special awards, scientific or technical: Academy plaque, Victor Caccialanza, Maurice Ayers and the Paramount set construction department, Nick Kalten, Louis Witti and the 20th Century-Fox mechanical effects department, honourable mention, Marty Martin, Jack Lannon, Russell Sherman and the RKO special effects department, A. J. Moran and the Warner Bros. electrical department. (L. O. P.)

Educational Motion Pictures.—During 1949 Encyclopædia Britannica Films celebrated its 20th birthday; Coronet and Teaching Films Custodians their 10th. The 1949 *Wilson Catalog* listed 7,030 films, of which 4,190 were evaluated.

Research.—The Instructional Film Research program of The Pennsylvania State college, under joint army-navy sponsorship through the special devices centre (navy), extended the total number of research projects on sound motion pictures to 45. About one-third of the projects were completed. The research, mainly on specially produced experimental films, dealt with a wide range of problems from training in perceptual-motor skills to the restructuring of attitudes.

Higher Education.—Colleges and universities became increasingly interested in audio-visual materials and in developing audio-visual centres. Ohio State university produced and released a film, *Accent on Learning,* showing audio-visual teaching methods used by instructors of geography, accounting, medicine, economics, engineering, and fine arts. The University of Chicago reported a grant of $20,000 from the Carnegie Foundation for the Advancement of Teaching, to be used in part to produce a teaching film on college teaching.

Organizational Activities.—The Educational Film Library association in 1949 had about 550 members, increasing its membership about 20% over 1948. During the year ending Aug. 31, 1949, members received evaluations of 335 films and copies of three special publications, in addition to regular issues of the *E. F. L. A. Bulletin* and service supplements.

The community film council movement, sponsored by the Film Council of America, continued to make solid advances during 1949. More than 15,000 copies of the eight pamphlets in the F.C.A.'s "How-to-do-it" series—touching such topics as how to conduct film forums, making community film surveys, obtaining and selecting films, putting on film festivals and workshops—were distributed to every state in the union and many other countries.

Six national organizations became new associate members of the F.C.A.—the Community Chests and Councils of America, the National Conference of Christians and Jews, the Cooperative League of America, the Association of Junior Leagues of America, the International Association of Lions Clubs, the Boy Scouts of America and the Girl Scouts of America.

The Department of Secondary Teachers of the National Eduation association extended the number of audio-visual demontration centres from the first group of 55 established in 1948 o 500 in 1949. The Department of Secondary Teachers sponored the third annual National Audio-visual Education week, upported by statements and proclamations by governors in 20 tates and by mayors in many cities.

Membership in the Department of Audio-Visual Instruction f the National Education association numbered more than ,100 in 1949. The membership includes almost all full-time irectors of audio-visual instruction in city school systems and nstitutions of higher education. The clearing house function of he department continued to be very important, and several housand requests for information and advice were answered.

Industrial Activities.—Membership in the Industrial Audio-Visual association increased to nearly 70 large users of films. More of the documentary or "realistic" approach was apparent n many industrial films of 1949, with clever use of magnetic ecording for location realism and more acceptance of real life characters. Julien Bryan's film for insurance personnel, *For Some Must Watch*, General Mills' film *The School That Learned o Eat*, Pan American World Airway's travel films on Ireland, Hawaii, etc., were notable examples. Progress was made in building visual information programs for employees.

Production.—The British Information service reported increased distribution and noted the release of 174 films during 1949. In the television field B.I.S. feature films were widely distributed through arrangement with commercial agencies. An outstanding release was *Waverley Steps,* first shown at the Edinburgh festival.

Coronet Instructional films reported that it had 251 subjects available for delivery as of Dec. 31, 1949, with a production schedule of six new films each month. Most productions were available in colour or black and white. In 1949 approximately 25% of all prints sold were in colour.

Encyclopædia Britannica Films expanded its production in most areas of subject matter and began experimentation on more costly productions with particular emphasis upon increasing technical quality. Several new subject areas were opened up, including American literature, economics, elementary hygiene. An expanded film program included new filmstrips for social studies, history, and geography. At the end of 1949, Encyclopædia Britannica Films had more than 500 teaching films in its library and about 75 filmstrips. Important new releases included *Productivity—Key to Plenty,* five American literature films on Franklin, Cooper, Longfellow, Jefferson and Irving; *Alcohol and the Human Body, The Loon's Necklace,* and three conservation films in colour on the living forest.

Continuing its program of producing text-films correlated directly with its textbooks, McGraw-Hill Book company in 1949 released 45 new silent filmstrips and five more motion pictures in the fields of chemistry, accounting, economics, marriage and American government. McGraw-Hill also released a series of 24 sound filmstrips on human relations in supervision. At year's end, it reported that 40 additional motion pictures and approximately 100 more filmstrips were in planning and production.

RKO Radio Pictures had a 16-mm. nontheatrical film library of more than 250 feature films distributed through its own 16-mm. film libraries, 21 in number. This list of feature films included Walt Disney classics as well as historical and biographical films. The *This is America* series of short subjects were available from RKO Radio Pictures under a three-year licence agreement to educational institutions.

United World Films, Inc., completed production of 36 two-reel films in the "Earth and its Peoples" series, produced by Louis B. de Rochemont at a cost of more than $2,000,000. Thirteen films in a complete series in zoology, 11 films in a track and field program and many additional titles in zoology, physical geography and child behaviour were also available.

Young America Films reported a total of 115 sound films and 93 filmstrips available at the end of 1949. The company announced a production schedule of 20 films and 40 filmstrips for 1950.

Teaching Film Custodians expanded its program from a highly restricted distribution for classroom use only within the continental United States to a world-wide distribution for the use of any agency with a program of "educational purpose and intent." Short subject material was excerpted from feature pictures under the supervision of committees of the National Council for the Social Studies, the Music Educators National conference and the National Council of Teachers of English.

Use of Films in Religious Education.—Sharply increased use of films was reported by the International Council of Religious Education. Three hundred persons attended the 6th International Workshop on Audio-Visual Education at Lake Geneva, Wis. Evaluation committees were set up across the country and their results were made available to local church workers through the monthly *Evaluation Bulletins* of the Visual Education Fellowship and through the *Audio-Visual Resource Guide for Use in Religious Education,* the first edition of which was released in 1949. Production conferences were set up to serve as channels of possible collaboration for the various denominations engaged in production of audio-visual materials.

The motion picture panel for the National Commission for U.N.E.S.C.O. was completing a survey and evaluation of films useful internationally in the three fields of fundamental education, international understanding and the popularization and the social implications of science. Several countries including the United States had passed the Agreement for Facilitating the International Circulation of Visual and Auditory Materials of an Educational, Scientific and Cultural Character.

Progress was made in developing a film coupon scheme which would make possible purchase of films in one's own currency. U.N.E.S.C.O. would exchange dollar or other hard currency with the soft currency countries. This plan had already been adopted in the purchase of books. (Ed. D.)

Technical Developments.—*Colour.*—Several new colour films were introduced in 1949. The Ansco process was further developed and received additional commercial use. A complete line of film types was now available for all of the necessary steps from the original taking film through the "duping" and special effects steps to release prints.

Du Pont introduced a positive film for making three-colour prints from separation negatives. This film was notable for employing a synthetic polymer which combines the functions of the gelatin and the colour former usually employed.

Eastman introduced, on an experimental basis, three-colour negative and positive film of the single film, triple emulsion type. Tests on these films were in progress in Hollywood at the close of the year. Both Eastman and du Pont continued experimenting with a negative film involving the use of three emulsions, two of which are subsequently stripped from the original base and mounted on new film bases in the laboratory before development. Polacolor corporation introduced and commercially used for a limited number of three-colour cartoons a process using a standard single emulsion, black-and-white positive film.

Photography.—Latensification, a system for increasing effective film speed, involving a low intensity, relatively long time general exposure of the film immediately before development, was used considerably in 1949 as a means of reducing the cost of producing motion pictures.

A new portable camera, the Camerette, manufactured by

Établissements Cinématographiques Éclair of France, was introduced in the United States during 1949. This camera has some excellent operating features and was well received in Hollywood.

Sound.—Magnetic recording was gradually being integrated into the production of motion pictures in Britain, Europe and the United States. Its freedom from photographic printing and developing distortions, the possibility for somewhat smaller and lighter recording equipment, and operating economies were factors stimulating its use.

A new miniature, nondirectional condenser microphone and associated amplifier was introduced in Hollywood by the Altec Lansing corporation.

Set Construction.—There was considerable activity in the application of new plastic materials to various phases of set construction. These included breakaway glass, combinations of plaster and plastic, low-temperature thermosetting plastics for casting in ornamental objects of various types, lightweight tree trunks, building columns and many other similar applications. Strippable adhesive was used with wallpaper and temporary flooring such as linoleum or asphalt tile. In both applications, this adhesive afforded easy removal of the surface material.

A new photographic backing was introduced, available in fairly large sizes, either black-and-white or in full colour. Its translucence permitted novel and realistic effects to be obtained by lighting from the back.

Theatre Television.—Two systems of theatre television were being developed and were in limited commercial use—the instantaneous projection system and the film storage system. In the former the television picture was projected from special television receiving equipment directly on the motion-picture screen. Installations of this type were made in theatres in Boston, Mass., New York, N.Y., and Philadelphia, Pa.

In the film storage system, the television picture was photographed on 35-mm. film from special television receiving equipment located in the theatre. The film was processed on a high speed basis and could be projected through the standard theatre projection equipment a few minutes after reception of the television picture. Installations of this type were made in New York city and Chicago.

The Federal Communications commission conducted hearings on theatre television at which the Society of Motion Picture Engineers and two theatre chains were requested to present briefs. One of the chains presented a detailed plan for a network of approximately 25 theatres located in nine different cities. The proposal contemplated a special television network, distributing either special programs staged for the purpose, public events of common interest or selected programs also being telecast for home reception. (W. V. W.)

Canada.—National Film board activities held the centre of the stage during 1949. The most striking films were: *What's under the Label?* to mark the 75th anniversary of Canada's first food and drug laws; *Land in Trust,* describing the soil conservation problems facing farmers in different parts of Canada; *Capital Plan,* reporting on Jacques Greber's plans to beautify Ottawa, Ont.; *Canadian Cruise,* a tour by motor cruiser through the Rideau canal; *Newfoundland—Atlantic Province,* the entry of Newfoundland into confederation. By September there were 10,000 National Film board prints circulating in the United States. Anticipating Canadian television, the board took steps to create a stock-pile of films suitable for video.

Private film production during 1949 was limited. Quebec Productions released *Un Homme et son péché* ("A Man and His Sin"), based on the popular 10-year-old French-Canadian radio show of the same name describing the life of a miser; Renaissance Films completed the shooting of *Forbidden City,* a mystery plot with a Montreal, Que., background.

The first annual Canadian film award went to *The Loon's Necklace,* an Indian legend in full colour. (C. Cy.)

Great Britain.—During 1949 the quota for British productions which must be shown in British motion-picture theatres was reduced from 45% to 40%. The supply of British films, however, began to fail, for producers found that it was difficult to finance films which, although protected as far as exhibition was concerned by an artificially high quota, did not cover their costs even when they were reasonably successful with the public. In November J. Arthur Rank, Great Britain's senior producer and studio-owner, declared he had lost £3,500,000 in production ventures. He declared that *Henry V,* made in 1943 and first released in London in 1944, had only four weeks earlier succeeded in recovering the costs of its negative—nearly five years after its initial release. In the same period it had contributed more than £400,000 in entertainments tax.

In spite of these economic difficulties Great Britain managed to produce during 1949 some films worth attention in any year. Ealing Studios, under the supervision of Sir Michael Balcon, produced a new series of comedies with something of a common style—including *Kind Hearts and Coronets* (Robert Hamer), *Whisky Galore* (U.S. title *Tight Little Island*) (Alexander MacKendrick) and *Passport to Pimlico* (Henry Cornelius). Charles Frend's *Scott of the Antarctic* in colour had been a great prestige success, but Harry Watt's second Australian film, the historical *Eureka Stockade,* was something of a disappointment, largely because of its poor acting.

Another well-intentioned realistic film which failed in part to survive the test of scripting and acting was *Blue Scar* (Jill Craigie), a film set and produced in a Welsh mining village. Two other films also in the realistic style were *Give Us This Day* (Edward Dymtryk), remarkable for its reconstruction of Italian life in New York, and *The Small Back Room* (Michael Powell and Emeric Pressburger), based on Nigel Balchin's novel of civil service research work during World War II. Films which had success during the year and which were based on novels and plays included *The Guinea Pig* (John and Roy Boulting), *The History of Mr. Polly* (John Mills), *The Passionate Friends* (David Lean)—both the latter derived from novels by H. G. Wells—and *Quartet,* based on four stories by Somerset Maugham. The most discussed films of the year were Thorald Dickinson's period piece *The Queen of Spades* and Carol Reed's *The Third Man,* which gained the Grand Prix at the Cannes Film festival.

These films, produced during the past two years but shown mainly during 1949, proved that Great Britain was capable of producing a small output of important pictures each year. Unfortunately a far greater number of poor-quality films were also released.

In documentary production, more particularly in the specialized technical and scientific films, Great Britain remained outstanding, as was shown by the many awards to British production given at the Venice festival. Many films, notably *Daybreak in Udi, Atomisation, Cornish Engine, Turbo-jet Propulsion, Digestion, Growing Girls* and the historical compilation *The Peaceful Years,* kept the standard of factual film production high.

Commonwealth.—Apart from the large output of commercial feature films in India, documentary production was the most important work done in films in the commonwealth. India, Australia, New Zealand and especially Canada (*see* above) were all consistently producing factual films under government sponsorship. The Australian National Film board's chief contribution during 1949 was the overlong but excellently shot *e Valley Is Ours,* a film about the Murray valley and its nomic and agricultural problems. An important fact was t during 1949 the Shell Film unit established a branch pro- ction unit in Australia to produce technical and scientific ns in the Pacific.

In India the government-sponsored organization, Information ms of India, produced newsreels and documentaries for both atrical and nontheatrical exhibition; the languages used re English, Hindustani, Tamil, Telugu and Bengali, and the jects were political, social and cultural.

Czechoslovakia.—After the success of the Czech war films 1946–47, the unique work of its cartoon and in particular its ppet films attracted international attention. The chief tech- ians of the puppet films were Jiri Trnka and Borivoj Zeman: ne of the latter's films used examples of the glass figures for ich another industry in Czechoslovakia is famous. Among ture films shown in 1949 were the war subjects *The Ghetto rezin* (Jiri Weiss) and *The Silent Barricade* (Otaka Vavra).

France.—French producers continued production on the ne scale as in 1948, about two-thirds that of the prewar put. Artistically speaking, it could not be said that France cupied the position it did before World War II as the leading ropean centre for the production of remarkable films. As Great Britain, there was no longer a school of French pro- ction like the work of the Italian realists. Each director of portance, Marcel Carné, Jean Cocteau, H. G. Clouzot, cques Becker, Claude Antant-Lara, Julien Duvivier or Yves égret, went his own way; perhaps all they had in common a certain extent was a taste for bitterness and disillusion.

Some new or less well-known directors came forward during year. Jacques Tati in a simple burlesque called *Jour de e,* which he produced and in which he starred, gained the tinction of being compared with Charles Chaplin. Yves égret made a controversial and bitter film, *Manèges,* in ich a man is exploited by his wife and mother-in-law to a al pitch of inevitable resentment. Jean Devaivre made a hnically interesting mystery film, *La Ferme des sept péchés,* d Louis Daquin produced a socially more healthy film called *Point du jour,* photographed in the realistic setting of the évin, France, mining area. The most controversial film of the ar was H. G. Clouzot's *Manon,* which in spite of winning the and Prix at Venice, met with considerable censorship diffi- ties in several countries through its handling of a modernized rsion of the Abbé Prévost's story. Other films of interest luded *Les Parents terribles* (Cocteau), *Rendez-vous de juillet* ecker) and *Au Royaume des cieux* (Duvivier).

Germany.—In 1949 Germany was reviving its film produc- n under the complex and varying administrations imposed the different occupying powers. The cinemas were well at- ded and on the free market of Western Germany British d U.S. films were popular with exhibitors and audiences. e best facilities for film-making were in the Russian and S. zones. The films most popular with audiences were un- rstandably films of escape. *Berliner Ballade* (R. A. Stemmle d Günther Neumann) satirized German self-pity to some ent, while *Liebe '47* (Wolfgang Liebeneiner) stressed it. her films dealing in various ways with social themes were *e Buntkarierten* (Kurt Maetzig), *Pit "Aurora"* (W. Schleif d E. Freund), *The Blum Affair* (Erich Engel) and *The Call* sef von Baky).

Italy.—For how long Italy, with the advantage of its com- ratively low production costs, would be able to continue to e directors such as Roberto Rossellini, Vittorio de Sica, Al- rto Lattuada and Luigi Zampa freedom of subject and style s debatable. Italian audiences, like those elsewhere, pre- rred romantic films to those realistic subjects which gave Italy a world-wide reputation immediately after World War II. Many of these now well-known films were produced at a cost of little more than £20,000 to £30,000; *i.e.,* at a rate less than one-sixth what their production cost would have been in Great Britain or the United States. There was no doubt that freedom of subject and treatment as exemplified by the Italian motion picture was closely related to this low production cost; were this condition to disappear these films could probably not be made. In the same way, the fine films on Italian art made by Luciano Emmer could be made because the overhead expenses involved were small.

De Sica's simple and beautiful film *The Bicycle Thief,* the story of a day in the life of an unemployed man and his son, led Italian realist production for 1949. Lattuada's *Mill on the Po,* involving the Italian agrarian labour trouble of the 19th century, was also important. Rossellini worked during the year on two films, *Terra di Dio* (*Stromboli*) with Ingrid Bergman and *La Macchina Ammazzacattivi,* a satiric fantasy set in Amalfi. Mario Camerini's *Molte Sogni per le Strade* with Anna Magnani was in a lighter style, and two good melodramas were Guiseppe de Santis's *Bitter Rice* and Pietro Germi's *In the Name of the Law.*

Poland.—Poland had been building up its film industry since 1944. By 1949 it had already achieved a fine school of documentary films as a part of its nationalized industry, but its ability to make important feature films was now also established. *The Last Stage* was a completely convincing reconstruction of life in the women's concentration camp of Auschwitz, Poland, directed by Wanda Jacubowska; *Robinson Warsaw* (Jerzy Zarzycki) dealt with the lives of a number of Warsaw citizens during the destruction of the city by the Germans; while *Truth Knows No Frontiers* showed the martyrdom of the Polish Jews in the Warsaw ghetto.

Scandinavia.—As film-producing countries, Denmark and Sweden were far ahead of Norway, which had only the smallest output of films in the documentary style. Whereas Denmark specialized in documentary production under state subsidy similar to that of Great Britain, Sweden concentrated mainly on commercial feature films, a few of which were shown widely in other countries. New directors of importance who emerged from these countries were Bjarne Henning-Jensen of Denmark and Arne Sucksdorf of Sweden. The former was noticeable for his handling of children and adolescents in his sensitively photographed films; the latter was an experimentalist in subjects involving location work and carefully contrived rhythms.

U.S.S.R.—Production in the U.S.S.R. had still not fully recovered from World War II, and the number of feature-length films produced remained comparatively small. Among films of merit were *Academician Pavlov* (G. Roshal), *Lenin* (M. Romm), *The Battle of Stalingrad* (V. Petrov), *Young Guard* (S. Gerasimov) and *The Village Teacher* (M. Donskoy). *Lenin* was a well-made historical compilation including a number of extracts from the "classical" silent films of the '20s. The others included well-acted, realistic reconstructions of the life and work of famous soviet scientists and of Joseph Stalin's conduct of the defense of Stalingrad. Soviet animated films, notably *The Little Hunchback Horse* and *A Tale about a Soldier,* were shown at the Edinburgh festival with great success.

Yugoslavia.—*Sofka,* which was shown with success at the 1949 Edinburgh Film festival, indicated, in spite of some slowness, a fine feeling for period and regional custom. Most Yugoslav film subjects, however, were still concerned with World War II as it affected Yugoslavia; and the documentary filmmakers were closely concerned with using the motion picture to develop educational work among the more illiterate sections of the country.

(R. Man.)

Motor-Boat Racing.

The 46-year-old Harmsworth trophy (British international trophy for power boats), held by American boats since 1920, returned to competition in 1949 for the first time since 1933, with a Canadian challenge by E. A. Wilson's "Miss Canada IV," driven by the owner's son, Harold Wilson. The races for it on the Detroit river, July 29–Aug. 1, were won by R. Stanley Dollar, Jr., of California, driving his "Skip-A-Long." He averaged 94.285 m.p.h., to better the previous (1931) Harmsworth record of 89.913 m.p.h.

Though it failed to take the Harmsworth trophy, "Miss Canada IV," early in October at Picton, Ont., set a new North American straightaway speed record of 139.5 m.p.h., a close call for the 10-year-old world's motor-boat speed record of 141.74 m.p.h. made by Sir Malcolm Campbell in England with "Blue Bird II." On another trial run Wilson topped the record with a mile at 142.292 m.p.h. but was unable to complete a second run of this trial as required for recognition by the national authority, the American Power Boat association.

The North American record, made by Gar Wood in "Miss America X," had stood for 17 yr., until on Aug. 20, 1949, when it was broken by Dan Arena, driving Jack Schafer's "Such Crust," on Gull lake, Mich., at 126.588 m.p.h., a mark which lasted only 6 weeks before Wilson bettered it with "Miss Canada IV."

Outstanding among unlimited speedboats in American racing during 1949 was Horace Dodge's Hacker-built, Allison-powered "My Sweetie," driven by Bill Cantrell. With the single exception of the Harmsworth, "My Sweetie" won every race it entered during the year, including the Gold cup and Silver cup events at Detroit, Mich., free-for-alls at Red Bank, N.J., and Buffalo, N.Y., and the President's cup race at Washington, D.C.

Motor cruiser racing, as a test of speed, had long been a dead issue, but the piloting contests known as "predicted log races" were gaining popularity in various countries. A high mark in this type of competition was reached in 1949 when 94 power cruisers started, and 91 finished, the 940-mi. course from Olympia, Wash., to Juneau, Alsk. The winner was George H. Patton, of Victoria, B.C., whose cruiser "Aileen" completed the course with a discrepancy of only 1.3% between its predicted and its actual logged performance for the voyage.

(W. H. Tr.)

Motor Transportation.

The production of new buses in the United States during 1949 was less than half of what it was in 1948, when 11,143 buses were put into service on city and intercity bus lines. Available information indicated 4,650 motor buses and 650 trolley buses were produced in 1949 for bus companies that were operating over regular routes.

The automobile industry's 1949 production in the United States was placed at 6,255,401 vehicles. Included in this were 5,119,911 passenger cars and 1,135,490 trucks and buses. The industry's previous record was in 1929 when 5,358,420 cars and trucks were produced. Overseas shipments declined in 1949 to about 300,000 vehicles, compared with 436,217 in 1948. In 1929, the record year, exports numbered 733,762 vehicles. At the end of 1949 it was estimated that nearly 3,000,000 more passenger cars and trucks had been registered in the United States than in 1948. According to preliminary registration totals released by the U.S. bureau of public roads, there were 35,491,000 passenger cars and 7,807,000 trucks and buses on the road. Like passenger car registrations, truck registrations were at an all-time high.

The U.S. transit industry as a whole in 1949 carried 46% more passengers than the 1936–40 average. The total of passengers or riders carried by the industry in 1949 was estimated at 19,000,000,000. While this figure was 11% lower than that for 1948, it represented a weekday average of about 63,000,000 rides on the nation's streetcars, trolley buses, buses and subway systems. Fare increases kept the industry's operating revenues at $1,490,000,000, or slightly above those of 1948. Operating expenses, including depreciation but not taxes, decreased in 1949 by approximately 1.5% to $1,324,000,000. When compared with the previous year, according to these preliminary figures, net revenue was approximately $166,000,000, or 14.52% more than in 1948. This $166,000,000 was the return on $3,900,000,000 estimated property investment by the industry. Despite poor net earnings, transit companies had purchased 3,000 surface and subway cars, 3,500 trolley buses and 37,000 motor buses, or nearly 44,000 new vehicles in the years 1944–49. Estimates placed the number of surface trolley cars in use during 1949 at 16,100, a decrease of about 41% since 1944; and buses at 59,000, an increase of 22% during the same period. The total number of passenger-carrying vehicles owned by the transit industry was estimated at slightly more than 90,000, approximately the same number as in 1948. However, the vehicles purchased in later years generally had greater seating capacity and the actual number of seats available for riders had increased.

One of the newer developments in the transit industry was the use of radio on buses and streetcars. Radio stations paid the cost of installing FM sets in vehicles and benefited from the guarantee of an assured audience for their advertisers. The transit company received either a percentage of advertising revenue or a flat monthly fee per vehicle. At the close of the year programs were being heard in more than 3,000 trolley buses, motor buses and streetcars in 15 cities. Independent studies indicated that passengers favoured programs which furnished music, weather announcements, news and sport summaries.

Approximately 97,600 buses were used daily during the school year of 1949 to transport 5,720,000 children to and from 45,256 public schools, largely in the rural areas. In this service, which covered 2,079,000 mi. of routes, the buses rolled up approximately 736,000,000 bus mi. during the year. The cost of this service for the year was about $177,500,000.

Truck registrations in the U.S. in 1949 numbered more than 7,300,000. According to the American Trucking association, trucks were performing nearly 80,000,000,000 ton-mi. of service annually, and carried approximately 60% of the total tonnage moved in the nation's commerce during the year 1948.

In the bus and the truck fields the trend continued toward the use of diesels. The number of diesel trucks in service increased from about 7,600 in 1944 to about 12,000 in 1948. In the bus field dieselization had grown more rapidly; more than 70% of the new buses delivered to companies in two months in 1949 were diesel powered. It was estimated that in 1949 almost 40% of the total bus production for common carriers in city and intercity service were diesel powered.

In bus design the year was marked by the development of the 50-passenger city-type bus for ultimate use on the municipally owned lines in New York city. This bus had staggered seats, wide and easy-moving windows, fluorescent lighting, double width exit and entrance doors and improved springing to give a smooth ride. It had a torque converter, a hydraulic power steering system and a 40-ft. turning radius. It was expected to have high schedule speed and low maintenance and operating costs.

Design of vehicles for intercity carriers was high lighted by the Greyhound "Scenicruiser," a deck-and-a-half type of luxury motor coach 40 ft. in length and powered by a 220 h.p. diesel engine, and by the "Continental," also a deck-and-a-half luxury coach built for the Continental bus system, Dallas, Tex.

During 1949, city and intercity bus companies opened or were at work on building projects costing $35,000,000, to house equipment, personnel and passengers. The bulk of this expenditure was being borne by the larger intercity companies, mainly the Greyhound, Continental, American and Trailways systems. One of the two largest projects was located in Chicago, where Greyhound was constructing a $7,000,000 terminal and office building; the other was in New York city, where the port of New York authority was at work on a $20,000,000 union bus depot. Under way in Memphis, Tenn., was a $1,000,000 project for Dixie Greyhound lines. In the truck field the most impressive project was the huge Union Motor Truck terminal in New York city opened by the port of New York authority. Located four blocks from the entrance to the Holland tunnel, this terminal was expected to reduce trucking costs, expedite deliveries and relieve traffic congestion. Howard S. Cullman, authority chairman, estimated that use of the terminal would cut the operations of the big trailer-trucks on city streets by 25% and those of smaller trucks 12%, and that the terminal would save $1,000,000 a year to the trucking industry. (*See* also AUTOMOBILE INDUSTRY.) (C. W. S.)

Great Britain.—At the end of 1948 the British Transport commission had acquired the 15 or so bus companies which made up the Tillings Motor services, one of the largest in the country. On Jan. 25, 1949, it also acquired control of the Scottish Motor Traction group for £23,500,000. Thus by the beginning of the year the commission controlled nearly 20,000 buses and coaches including those belonging to London Transport. It also held large interests in British Electric Traction and its subsidiary companies. It was never the intention, however, that the commission should directly control even a majority of the bus services in the country: the function of the Road Transport executive and of the Road Passenger executive, which succeeded it in 1949, was to co-ordinate, in conjunction with the local authorities, the bus services in different areas.

During 1949 approximately 1,600 new or reconditioned buses were put into service by the London Transport executive. Though this was twice as many as in the previous year the figure did not cover the number of old buses withdrawn from service, and the greater operating efficiency in terms of miles run was largely gained at the expense of passengers' comfort. However, Lord Latham, chairman of the London Transport executive, expressed optimism about the situation in 1950 when there was expected to be a net increase in numbers of buses and trolley buses and a consequent expansion of services. He also announced that preliminary steps were being taken for the conversion of the south London street railways into bus routes and that 16 new garages or converted depots were to be built at a cost of £4,600,000. For the more distant future the executive was preparing the reorganization of its services to meet the decentralization of population under the government's plan for London.

Under part III of the Transport act of 1947, the commission was to have the sole right to carry on long-distance haulage for "hire or reward" (except in the case of goods like gasoline, milk and timber for which specialized vehicles were needed) after an appointed day to be fixed by the minister of transport. In November the minister announced that the day had been fixed as Feb. 1, 1950. After this date only firms which had been operating on Nov. 28, 1946, and had original permits or those which had since been granted permits to operate could continue in their business, and then only until the Road Haulage executive was ready to take them over.

In 1948 a nucleus of important road haulage concerns had been taken over by the commission. Some of these were part of the assets of the railways and others had been taken over by agreement or by compulsory acquisition. By the end of 1949, 30,000 vehicles—three-quarters of the total in the A and B licence class—had been acquired and an organization comprising eight regional divisions and districts set up to control them.

In its *Report and Accounts for 1948* (published Sept. 1949) the British Transport commission called attention to the post-war growth in the numbers of C licence holders. In 1947 there had been 487,151 vehicles under C licence, and by the beginning of 1949 the figure was 590,516. These traders, who, so long as they carried their own goods, would be able to operate within any distance of their base, formed a hard core of competition to the services provided by the commission; and the *Report* stated, rather ambiguously, that although most of the vehicles were under 30 cwt. and were therefore presumably engaged in retail distribution, the increased use of C licensed vehicles affected the commission in planning, in fixing charges and in the eventual integration of its services.

It was evident that a clear indication of the future of C licence holders could not be expected until at least the appointed day when practically all other forms of transport would be controlled by the commission. (*See* also ACCIDENTS; RAILROADS.)

FILMS OF 1949.—*Horizons Unlimited* (National Highway Users Conference); *Trucks That Serve Our City* (Tompkins Films).

Motor Vehicles: *see* ACCIDENTS; AUTOMOBILE INDUSTRY; ELECTRIC TRANSPORTATION; FEDERAL BUREAU OF INVESTIGATION; MOTOR TRANSPORTATION.

Mozambique: *see* PORTUGUESE COLONIAL EMPIRE.

Mules: *see* LIVESTOCK.

Municipal Government.

Significant federal legislation in 1949 affecting cities included provision of increased federal aid for airports, increased federal aid for hospital construction by municipalities, and payments in lieu of taxes to cities on low rent housing projects for fiscal 1950 and retroactive payments for fiscal 1949 and 1948. Also, the program of federal aid for local public works planning programs which terminated on June 30, 1947, was resumed in 1949 when congress authorized a two-year program of $100,000,000 interest-free loans to states, cities and other public agencies to finance plans for a $3,000,000,000 shelf of public works projects and appropriated $25,000,000 for fiscal 1950. While the backlog in needed public works throughout the country was estimated at about $100,000,000,000, materials were once more avaliable and there was a decline in construction costs; an all-time high for construction by state and local governments was reached in July, 1949, when contracts for projects costing $500,000,000 were awarded in a single month.

After hearings in May at which federal, state and local officials, members of the Commission on Organization of the Executive Branch of the Government and others appeared, a measure for establishment of a permanent National Commission on Intergovernmental Relations composed of 14 members representing the federal, state, municipal and county governments and private citizens was introduced into the senate. The commission would be responsible for continuous study of the allocation of functions between governmental levels and of intergovernmental fiscal relations. The American Municipal association at its annual conference in December adopted an extensive statement of national municipal policy on intergovernmental relations, endorsing federal legislation for establishment of a national commission, and urged increased aid by the federal government for urban streets and highway construction.

Housing.—The federal housing legislation of 1949 was designated by the president of the United States Conference of

Mayors as "the most important single piece of legislation affecting cities that has ever been enacted into law." The two sections of major interest to cities were title I, on urban redevelopment, providing federal aid in the acquisition, clearance and development of blighted or undeveloped areas, and title III, offering federal aid in the construction of low-rent public housing for low-income families. (*See* HOUSING.) The federal government would finance two-thirds of the net cost of redevelopment projects, and loan funds covering 90% of the cost of public-housing projects. Under title I, $1,000,000,000 in federal loans and $500,000,000 in federal capital grants over a five-year period were authorized; under title III, which permits construction of a total of 810,000 dwelling units over a period of 6 years at an average of 135,000 per year, $1,500,000,000 in loans and up to $308,000,000 a year for 40 years in subsidies to cover the difference between operating costs and rentals charged were authorized.

Municipal Finance.—Fiscal data on the nation's 397 largest cities for 1948—latest available in 1949—showed that expenditures by cities of more than 25,000 population, totalled $4,000,000,000 and exceeded expenditures in 1947 by 16%. Revenues amounted to $3,700,000,000 or 14% more than in 1947. Revenues from property taxes increased 10%; from city sales and gross receipts taxes 31%; and from state aid and service charges 14% each. Expenditures for current operations, constituting three-fourths of municipal spending in 1948, exceeded the 1947 total by 13%; capital outlays increased almost 50%. Debt continued the upward trend resumed in 1947.

Budgets early in 1949 reflected a cautious approach by city officials because of declines or levelling off in prices and construction costs. There were few general increases in city salaries, few extensions of municipal services and no substantial increases in property tax rates.

During 1947 and 1948, local sales and income taxes had become the largest sources of tax revenues next to the property tax. Sales taxes became effective in a few larger New York cities following the enabling legislation of 1947; but Syracuse, N.Y., repealed its sales tax in 1949, to become effective in 1950. More than 130 California cities had sales taxes in 1949; Poughkeepsie, N.Y., Washington, D.C., and Fayette, Ark., adopted sales taxes during the year. Local income taxes were adopted in several large Ohio cities in 1948, as well as in St. Louis, Mo., and Louisville, Ky., and in Dayton, O., and Portland, Ore., in 1949—subject to referendum in May of 1950 in Portland. The outstanding development, however, was in Pennsylvania, where more than 180 communities had income taxes under the "tax everything" act of 1947. Amendments to the act in 1949 modified it somewhat by prohibiting local taxes on public utility services, natural resources and farm and manufactured products, placing ceilings on a number of taxes and limiting municipal revenues to the equivalent of a 10-mill real estate tax and school district revenues to the equivalent of a 15-mill tax. The amendments also prohibited salary and wage taxes by school districts on nonresidents and limited such taxes to a rate of 1% in other units.

The work of the Hoover commission in recommending economies in the national government set the wheels in motion for similar action at the local level. Los Angeles, Calif., for instance, appointed a commission of 27 citizens to study all city departments with a view to the improvement of city organization and operating methods. In New York city, a survey of all departments with the purpose of increasing efficiency and reducing operating costs was planned. Boston, Mass., installed many improvements in its financial procedure as a result of recommendations made by a city finance commission. Berkeley, Calif., and other cities reorganized their finance and other departments, while improved budget procedures were adopted in Rochester, N.Y., Wichita, Kan., Richmond, Va., and Kansas City, Mo.

Adjusted tax rates showed an annual increase of only .06% in 1949, compared with 3.8% in 1948, according to a study of 248 cities of more than 30,000 population; the total increase for the period 1945–49 was 8.1%. Assessed valuations for these cities increased 5.1% in 1949, compared with 5% in 1948; the increase over the period 1945–49 was 26.5%. Tax collections declined slightly from 1948 to 1949, from an average of 92.26% in 1948 to 96.12% in 1949.

Cities shared in the rise of local government gross debt in 1949 to an all-time high. The total for cities, as distinguished from other local units, reached $9,496,000,000, an increase of 7% over 1948, but not the high mark for this unit of government. The 1949 city total was exceeded in 1932, 1940 and 1942, for instance, when totals were $9,909,000,000, $9,899,000,000 and $9,806,000,000, respectively. Just over half the city debt in 1949 was for general government purposes, the remainder for publicly owned enterprises.

State and municipal bonds approved by the voters reached a record high of $2,217,000,000 in 1949, compared with $1,449,000,000 in 1948—an increase of 53%. Of these approvals, $1,348,000,000 were in Nov. 1949, compared with a total of $876,000,000 in Nov. 1948 and the previous record high of $1,115,000,000 in Nov. 1947. State and municipal bond sales for 1949 totalled $2,989,900,000, compared with $2,989,700,000 for 1948—well above the previous all-time high of $2,373,000,000 of 1947.

Personnel.—The steady postwar increase in number of employees continued in 1949. In October, city nonschool employees numbered 1,099,000, an increase of 5.8% over the same month in 1948 and 25% over Oct. 1945, when the first postwar increase for that month was reflected. The increase in 1949 was the highest since 1946, when it was 8.6%. City pay rolls for nonschool employees rose considerably more rapidly than did the number of employees, though the rate of increase slackened slightly in 1949. The Oct. 1949 total was $223,400,000, compared with $206,200,000 in Oct. 1948—an increase of 13.2%. The increase a year earlier was 13.8% and the highest rate of increase, 20.1%, was in 1946. Comparative October totals as compiled by the census bureau for city nonschool employees for the decade 1940–1949 and for city school employees for four available years were as follows:

Year (October)	Number of Employees (In thousands)		Monthly Pay roll (In millions of dollars)	
	Nonschool	School	Nonschool	School
1949*	1,099	196	233.4	57.0
1948	1,039	211	206.2	59.8
1947	996	205	181.2	55.0
1946	955	199	160.0	45.9
1945	879		133.2	
1944	855		125.0	
1943	858		119.3	
1942	872		109.7	
1941	901		108.4	
1940	887		104.9	

*Preliminary data.

A survey of pay rates in 100 cities showed that fewer cities granted increases in the first half of 1949 than in the corresponding period of 1948 and 1947: 40%, compared with 61% and 47% for 1948 and 1947, respectively. Madison, Wis., one of the 20 or so cities to inaugurate a cost-of-living wage adjustment plan, was the first city to make a general wage reduction.

New York city, on the contrary, raised the mayor's salary from $25,000 per annum to $40,000 and authorized a $10,000 yearly increase for each of the seven other members of the board of estimate and a $2,000 annual increase for the 25 city councilmen, besides salary increases totalling $73,100 for 24 appointed city officials—a total increase of $208,100 effective Jan. 1, 1950.

War on Organized Crime.—The spread of organized crime throughout the nation in such cities as New York, New Orleans, La., Los Angeles, Kansas City and Chicago, Ill., resulted in unprecedented action by the American Municipal association, representing about 10,000 municipalities. At its annual convention in Dec. 1949 the trustees were directed to prepare a comprehensive program for the pooling of their resources and information by all cities faced with the problem of organized crime. DeLesseps Morrison, mayor of New Orleans and president of the association, called on the federal government for aid in the eradication of crime syndicates. The nation-wide operations of slot-machine men were exposed by a California Special Crime Study Commission report of March 7, 1949, which estimated that 20% of the gross take of the national slot-machine racket was expended annually for the bribery and corruption of municipal law enforcement officials. It was estimated that the numbers racket and illegal race track gambling provided additional huge sums for protection and graft.

Water Shortages.—A critical water shortage, caused by light rainfall and greatly expanded demands on water systems, struck the northeastern states from Maine to Virginia in the closing months of the year, resulting in emergency measures to conserve city water supplies. A state of emergency was proclaimed in heavily populated sections of New Jersey; two cities, Jersey City and Hoboken, slashed water pressure five to ten pounds. New York city embarked on a voluntary conservation program. (*See* Public Health Engineering.)

Council-Manager Government; Proportional Representation.—On Dec. 31, 1949, there were 891 council-manager cities in the continental United States and 15 council-manager counties. Of the cities, 71 adopted the plan in 1949, compared with 74 in 1948 and 75 in 1947. There were eight abandonments in the United States in 1949. Voters of Des Moines, Ia., decided to abandon the commission form of government it had adopted in 1908, known as the Des Moines Plan, in favour of council-manager government to become effective in March 1950.

Proportional representation was abolished in Massachusetts when the legislature, after several attempts, succeeded in removing it from the state's optional Plan E charter for cities. Because of an error in drafting, however, this law seemed still subject to clarification by the courts. The six cities which had already adopted proportional representation were exempted, but a referendum on the subject on petition of 10% of the voters was provided. These cities—Cambridge, Lowell, Worcester, Medford, Quincy and Revere—all elected councils and school boards by proportional representation in November. Somerville, Mass., in November and Gloucester, Mass., in December voted to adopt Plan E government, including proportional representation despite the state legislative ban. Three Ohio cities —Toledo, Cincinnati and Hamilton—also elected proportional representation councils. Toledo, however, on its fifth try, voted to supplant proportional representation with elections at large by majority vote. New York city, electing its first city council since its repeal of proportional representation in 1947, gave 24 of the 25 seats to the Democrats, who received only 52.6% of the votes cast; one Republican was returned. Under proportional representation, probably 19 seats would have gone to the Democrats, 7 to the Republicans, 3 to the Liberals and 3 to the American Labor party.

The federal-managed town of Oak Ridge, Tenn.—devoted to the production of atomic energy—chose its seven-member town council by proportional representation on Sept. 13, 1949.

(*See* also Elections; Town and Regional Planning; also under individual large cities.)

(A. M. Ds.; L. Gu.)

Canada.—Toward the end of 1949 the federal government announced a municipal aid plan, which gave grants to municipalities where the federal assessment exceeded 4% of the total assessment within the municipality. The grants amounted to 75% of the revenue loss because of lack of tax revenues.

The annual meeting of the Canadian federation of mayors and municipalities was held in Montreal, Que., out of which came a brief presented to the federal government. It asked for aid to municipalities where unemployment was present, revision of the grants-in-lieu-of-taxes formula, remission of the 8% federal sales tax on municipal purchases and delay in rental increases.

Investments of Canadian chartered banks in municipal bonds increased because of the fact that municipalities generally were in good financial condition.

Victoria, B.C., voted to become the 36th Canadian municipality to adopt the city manager system of government.

(C. Cy.)

Great Britain.—An outstanding event of the year 1949 was the setting up in January, under the authority of the prime minister, of the Local Government Manpower committee composed of representatives of government departments and local authorities. This committee originated from the request made by the government to local authorities in 1947 that the local authorities should economize in manpower. The local authorities had thereupon made representations to the government that economy in manpower was not possible while government departments continued to concern themselves with the details of local government administration and that reduction in manpower could be carried out only if departmental controls over local authorities were diminished. The work of the committee was subdivided by the appointment of a number of subcommittees and panels, each concerned with particular local government services.

The first general local government elections to be held under the Representation of the People act, 1948 (which effected certain amendments in the law of elections), took place during April and May. The alteration in the law and procedure and, in some cases, in the areas of constituencies made it difficult both to foretell the results of the elections or to compare them with those of previous elections. Politically there was a swing toward the right; some former socialist councils lost their majorities and in many cases the socialist majority was substantially reduced. The election for the London county council produced the extraordinary result that Conservatives and Socialists obtained equal numbers of seats on the council (64 each) with one Liberal in addition. The fact that a number of the aldermen remaining in office were Socialists was sufficient to ensure the election of a Socialist chairman. In the election of the new aldermen (for which only councillors may vote) the chairman of the council took the unusual step of voting. Five out of 11 of the aldermanic vacancies were secured for the Conservatives and the remaining 6 for the Socialists. In the result the council remained Socialist by a majority of 78 to 80 (aldermen and councillors together but excluding the chairman).

The local government world received with surprise the announcement by the minister of health (Aneurin Bevan) in the house of commons on June 27 that the Local Government Boundary commission was to be disbanded. The commission had, in their report for 1948, pointed out the difficulty of reviewing areas of local government without a corresponding review of the functions of local authorities. Bevan alluded to this difficulty and said that the government had come to the conclusion that it would be advisable to repeal the Local Government (Boundary Commission) act of 1945 from which the commission derived its powers; this would involve the winding up of the commission and would put the position back to what it had been before the act was passed until such time as the government had had an opportunity of reviewing the structure and functions of local government.

County councils and county borough councils were occupied during the year with the making of schemes for the setting up of valuation courts, constituted from valuation panels made up of unpaid members, to hear appeals from decisions of valuation officers of the commissioners of inland revenue who, under the Local Government act, 1948, were given the duty in place of the local assessment committees of making valuations for rating purposes. The minister of health asked that the panels should be constituted by Nov. 1949, so that the valuation courts could start functioning early in 1950. (W. E. J.)

Munitions of War.

U.S. Army.—Some of the developments in munitions and related fields during 1949 are here briefly described.

Armour.—Specially fabricated plastic armour was tested successfully in stopping a .45-calibre slug.

Battery.—The army signal corps perfected a 24-v. electric battery that would start an engine at −65° F. A dry-cell battery using magnesium instead of zinc was also made. It had twice the capacity of the conventional type and required no machinery changes for its manufacture.

Boat.—A new assault craft for use of infantry in crossing rivers was made of Fiberglas spun to one-thirtieth the thickness of a human hair. This was woven into cloth and impregnated with tough plastic. A boat so constructed weighed less than 300 lb., was powered by a 33-h.p. engine and could carry 15 men.

Deactivator.—The ordnance department worked out a process for safely removing fuses and boosters from high explosive bombs and projectiles. A television camera transmits an image of the work being done to an operator who manipulates control tools from a bombproof shelter.

Engines.—Continental Motors corporation developed an air-cooled engine for military vehicles. It ranges from 125 to 1,040 h.p.

Gases.—The chemical warfare service was responsible for testing and developing a new series of gases more deadly than lewisite or mustard gas. This new gas uses Tabun, first of the G series as a base. This series is also known as "green ring three" and includes the deadly nerve gases, sometimes referred to as psychological gases since they cause irresponsible action or behaviour among their victims. Small quantities of these new gases, inhaled or brought into contact with the skin, produce death.

Gasoline.—Congealed gasoline was developed for practical use. It may be stored in open bins and shipped in ordinary freight cars like coal. It does not explode nor does it ignite easily.

Generator.—The General Electric company built the first postwar mercury turbine generator. This used mercury vapour instead of steam to drive the turbine and was capable of producing 15,000 kw. of electricity.

Grenades.—John C. Garand patented a device for launching grenades from firearms, particularly gas-operated, semiautomatic weapons.

Laboratory.—The quartermaster corps received from a civilian manufacturer a highly developed and complete mobile laboratory for testing petroleum fuels and lubricants. It was completely self-contained and independent of other sources for electrical power, heat control, etc. It could maintain any critical range of temperature necessary for testing operations and, in a test at Wright field, O., maintained an inside temperature 140° higher than the temperature outside. In it could be tested all grades of gasoline, fuel oils, lubricating oils and greases.

Motors.—Two giant electric motors, each developing 25,000 h.p. and capable of producing a 1,500-m.p.h. gale, were built at Moffett air force base, Calif., to test full-scale aircraft at supersonic speeds.

Radio.—Brig. Gen. David Sarnoff, president of the Radio Corporation of America, developed a radio signalling system which circumvented former errors caused by fading, static or other unfavourable conditions.

Rifles.—The Firestone Tire and Rubber company, Akron, O., began mass production of two recoilless rifles which would give the infantry soldier striking power equivalent to field artillery. One was a 57-mm. shoulder weapon while the other was a 75-mm. rifle. The latter was fired from a standard machine-gun tripod and it hurled a 14-lb. high explosive shell more than four miles.

Rocket Launchers.—Several types of rocket launchers, wheeled and tank-mounted, were completed. They consisted generally of a large number of tubes, mounted in honeycomb fashion, lightweight, easily portable and capable of rapid fire with high explosive shells.

Rockets.—In firing tests with high-reaching rockets, much valuable material was heretofore lost. This condition was remedied by redesigning the war head of the rocket. At a distance of 100 mi. from the earth, the 3,600-lb. war head of the V-2 rocket is detached automatically from the rocket. This war head contains the instruments for upper-air research. When detached, the war head trails a 30-ft. diameter pilot parachute. When this assembly drops below 50-mi. altitude, the pilot parachute opens fully and drags open a 100-ft.-diameter parachute which brings the expensive instruments safely to the ground.

Steel.—The Lebanon Steel foundry produced an alloy steel which was functional at temperatures as low as −423°. It was an austenitic cast ferrous alloy containing 19.5% chromium and 9% nickel, among other metals. It could be used effectively in production of castings for pressure equipment in storage facilities for liquid oxygen used as a propellent in rocket guns.

Stock Pile.—It was estimated that $3,217,000,000 would be necessary to provide accumulation of a stock pile of strategic and critical materials to protect the United States from being shut off from access to supplies needed in an emergency. Of the planned stock pile, 40% was either on hand or under contract on June 30, 1949. It was hoped to reach 60% by June 30, 1950.

Tanks.—Greater power and manoeuvrability was secured in the "General Patton" tank by use of an improved 810-h.p. engine, by perfection of a new, rugged transmission system, and by adoption of a single "wobble-stick" control.

Teletypewriter.—An improved, waterproof teletypewriter was made which could be carried by a parachutist. It weighed 45 lb., just one-fourth the weight of the former types, and transmitted and received messages 66% faster than previously existing types. It was built to operate on radio and on wire circuits.

Weather.—The signal corps built a tropical testing chamber, composed of six rooms, wherein weather conditions could be simulated from fine fog mist to a tropical torrent of two inches an hour. (R. S. T.)

U.S. Navy.—Development of new U.S. navy weapons of offense and defense, capable of dealing effectively with anticipated future war conditions, was pursued vigorously during 1949 to keep pace with continuing rapid advances in the fields of high-speed aircraft, submarines and guided missiles. While much effort was directed toward developing radically new weapons, progress continued in providing improved interim weapons to maintain the fleet's high state of readiness.

Antisubmarine weapons continued to receive major attention. The recently commissioned U.S.S. "Robert A. Owens" and

Above: 75-MM. RECOILLESS RIFLE designed for close combat support, shown in use by U.S. army ground forces in 1949

Above, right: AEROBEE SOUNDING ROCKET leaving smoke trails in the wake of a launching at sea in 1949. The U.S. navy rocket, which soared 65 mi. above the ocean, was designed for high-altitude research into nuclear forces, and yielded data on the changes undergone by cosmic-ray particles during flight

Right: THE CONVAIR LARK, shipboard-launched guided missile powered by a rocket motor and designed to intercept and destroy enemy aircraft before ship or shore targets can be attacked

Below: THE M-46 "GEN. PATTON" TANK (foreground), an improved version of the U.S. army's M-26 medium tank (background), featuring the "wobble stick," a simplified control resembling that of a light plane, which replaced pedals and other complicated controls

U.S.S. "Carpenter," prototype navy hunter-killer destroyers carrying the latest armament and detection devices, were to be tested in 1950 against new high-speed schnorkel submarines.

Three new cruisers of the "Des Moines" class were the first to be equipped with the navy's new completely automatic rapid-fire eight-inch dual-purpose guns, capable of firing at battle ranges substantially faster than previous guns of this or larger calibres.

Fullest utilization of new weapons required advanced designs of computing machines and fire-control systems emphasizing automatic features of operation and increased speeds of probable targets.

Probably the most noteworthy progress was made in guided missiles, with research and development being conducted actively on missiles in the surface-to-air, air-to-surface, air-to-subsurface and air-to-air categories.

The U.S.S. "Norton Sound" was placed in operation to facilitate the testing of guided missiles at sea. This floating laboratory was used during the year for upper atmosphere research firings with the Aerobee missile. In the late spring of 1949 off Point Mugu, Calif., such control was achieved over 3,000 m.p.h. surface-to-air rockets that they were fired at a helium balloon labelled "friend" and then deflected to score a direct hit on another balloon labelled "foe."

Two new ordnance wind tunnels came into operation to accelerate work on guided missiles and other new weapons. One, at the Naval Ordnance laboratory, White Oak, Md., achieved Mach number 5.18 (or 5.18 times the speed of sound)—the highest speed ever attained in a tunnel of this size. The second, at the Massachusetts Institute of Technology, Cambridge, Mass., would permit the simultaneous training of technical students in advanced wind tunnel operation and the competent refinement of development designs and search for new aerodynamic knowledge. (A. G. Ne.; X.)

Air.—Evidence of the urgency and extent of the U.S. guided missiles program was shown in the fact that about $100,000,000 of the 1950–51 research and development budget was allocated to revolutionary weapons of this type. This amounted to 20% of the $500,000,000 budget approved by the Research and Development board.

Some details of the U.S. air force's first postwar air-to-air guided missile were released late in 1949. It was the Ryan Firebird, designated XAAM-A-1 (experimental, air-to-air missile, air force, first model). When this project was first announced in 1947 it was stated that it would result in one of the most compact weapons of its type yet designed, with a "built-in brain capable of doing its own thinking" once it had been launched. It was revealed in 1949 that this intelligence consisted of a complicated radar navigational and electronic system. Launched from a mother jet fighter plane, the Firebird was capable of heading off and destroying its enemy objective in a matter of seconds, even though the objective might be engaged in violent evasive action. In flight tests it showed all the speed first generated by the parent fighter plus the added power of its own booster rocket and finally its flight rockets. A direct hit is not necessary because an improved type of proximity fuze detonates its heavy explosive charge when the missile comes within lethal range of the enemy.

A further development of an air defense missile was announced which does away with the mother plane. This was a ground-to-air pilotless aircraft which was in advanced development in the U.S. It can climb much faster than a piloted aircraft and when it reaches the point where it can see the enemy with its own radar eye it cuts itself off from ground control and starts its electronic brain working. This solved a complicated mathematical equation taking into account the relative speeds of the enemy bomber and missile, and then enabling the missile to blow itself and bomber at the point of interception.

After two and one-half years of constructional work, the first long-range ground-to-ground rocket missiles were fired from the testing ground of the British Commonwealth of Nations at Woomera, New South Wales, in the summer of 1949. Between 2,000 and 3,000 personnel were employed at this station during the year. Supersonic missiles were fired on four ranges, the main range covering a course of 1,200 mi. to the western Australian coast and Indian ocean, with an extra 1,500 mi. to Christmas Island.

Intelligence reports from behind the "iron curtain" indicated that a high degree of activity in the guided missile field, especially in supersonic long-range rockets, continued to be under way.

Apart from the guided missiles field, a revolutionary tactical air development was the helicopter assault operation successfully tested by the U.S. marine corps, doing away with landing craft creeping ashore under heavy fire. (*See* also Aviation, Military; Jet Propulsion; Navies of the World.)

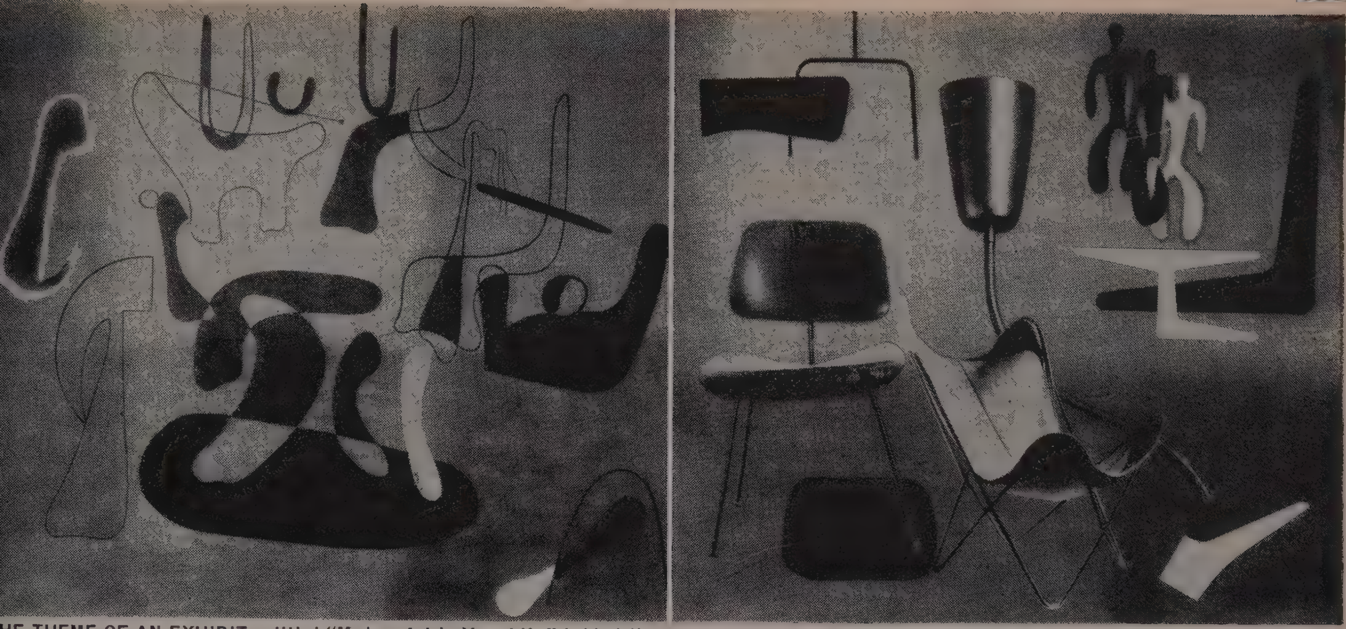
(N. F. S.)

Murray, Philip (1886–), U.S. labour leader, was born in Blantyre, Scot., May 25, and in 1902 went with his family to the U.S. Naturalized in 1911, he became a member of the international executive board of the United Mine Workers of America in 1912 and its international vice-president in 1920, holding that position until 1942. He was also president of the United Steelworkers of America after 1942, and in 1940 had succeeded John L. Lewis as president of the Congress of Industrial Organizations (C.I.O.). During World War II he pledged the C.I.O. to a no-strike policy, but at the end of the war he helped launch the several rounds of wage and other demands. In 1947 he publicly violated the Taft-Hartley labour law to launch a test case, but his indictment was dismissed on grounds that did not affect the constitutionality of the law. During the 1948 national elections, Murray first attacked Pres. Harry S. Truman's labour policy, but later supported Truman.

During the recession of early 1949, Murray announced that any full-scale depression would be the result of "manipulation of powerful business and financial interests." Late in 1949 he helped launch the fourth round of labour demands, this time concentrating on pensions. A six-weeks' strike against major steel companies resulted in new union agreements incorporating some pension elements. Murray was re-elected president of the C.I.O. at its national convention ending Nov. 4, at which time action was also begun to expel left-wingers from the C.I.O. executive board.

Museums. Museums of the United States grew in size and number during 1949 and were active in public education, but they were especially concerned in improving their exhibits.

The new museums of 1949 ranged widely in subject matter and location. Delaware established a state museum; Portland, Oreg., a museum of science and industry. Amherst college, Amherst, Mass., began construction of a $500,000 art centre, and the University of Georgia (Athens) completed the first of its Holbrook Memorial galleries. In Rochester, N.Y., the George Eastman house, a museum of photography, was opened. The American Museum of Atomic Energy was founded at Oak Ridge, Tenn. Historic buildings set aside during the year as museums included old Fort Wayne in Detroit, Mich., the Spanish fortresses of San Juan in Puerto Rico, the Perot-Morris house in Philadelphia, Pa., and Harriet Beecher Stowe's home in Cincinnati, O. Congress created the national trust for his-



HE THEME OF AN EXHIBIT entitled "Modern Art in Your Life," held at the useum of Modern Art, New York City, in 1949, is illustrated here by the ounterposition of (left) Joan Miró's painting, "Composition," and (right) a ollage prepared by William L. Harris out of photographs of materials shown the exhibit

oric preservation in the United States to help save historic uildings and sites threatened with destruction.

Many museums were enlarging or renovating their buildings. he Metropolitan Museum of Art, New York city, began a 3,000,000 construction program. Additions were being built by e Baltimore (Md.) Museum of Art, the California Academy f Sciences (San Francisco), the Colorado Museum of Natural istory (Denver), the Ohio State museum (Columbus) and hers.

Much was accomplished to make the exhibits more effective struments of education. Among the reinstalled units were the Iiddle American gallery of the University museum (Philadelhia), the Near Eastern and Far Eastern galleries of the Metroolitan museum, the Fossil hall of the Carnegie museum (Pittsurgh, Pa.), the bird exhibits of the Newark, N.J., museum and e physics section of the Chicago Museum of Science and ndustry. The Detroit Institute of Arts opened a hall on the rench background of the city, and other new exhibit halls ere installed by museums in Albany, N.Y., Buffalo, N.Y., Chigo, Kansas City, Mo., Los Angeles, Calif., and Nashville, enn. Historical displays placed by the national park service the specialized museums of four park areas were representave of the newer exhibits which combined specimens with careilly planned design and colour to increase their teaching ficiency.

The educational activities of museums were keyed to the inrests of contemporary life. The Museum of Modern Art, New ork city, devoted its 20th anniversary show to "Modern Art Your Time" and erected a sample house in its garden; the etroit Institute of Arts presented a special exhibition, "For Iodern Living"; and the Baltimore Museum of Art held a mposium on "Design and the Modern Home." In Boston, Iass., the Institute of Contemporary Art formed a department design with an active program to help designers, manufacrers and consumers. Children's museums emphasized interational relations and the work of the United Nations Educaonal, Scientific and Cultural organization (U.N.E.S.C.O.). *ee* also SMITHSONIAN INSTITUTION.) (R. H. Ls.)

Accessions to Art Galleries and Art Museums.—Many otable works of art entered the public collections during 1949. he National gallery in Washington, D.C., acquired a large Murillo, "The Return of the Prodigal Son," given by the Avalon Foundation through the generosity of Mrs. Ailsa Mellon Bruce.

New York's Metropolitan museum received as a gift from John D. Rockefeller a group of five tapestry panels from the famous set of "Nine Heroes" woven in the 15th century presumably for the duke of Berry. It also acquired a rare early Italian painting, "St. Sebastian" (*c.* 1445) by Andrea del Castagno (1390–1457). The Museum of Fine Arts, Boston, Mass., purchased a great Titian, "St. Catherine of Alexandria," painted about 1568.

Two notable Tintorettos entered other New England museums—the Currier gallery at Manchester, N.H., having purchased the Pietro Capello, "Venetian Senator" (1585–90), while the "Portrait of a Courtesan," dated 1574, went to the Worcester museum, Worcester, Mass.

The Detroit Institute of Arts acquired "St. Jerome in the Wilderness" by the great Spanish baroque painter Ribera (1588–1652), the portrait of Hendrick Swalmius by Frans Hals (1580?–1666) and Baron Gros's (1771–1835) sketch for "Murat Winning the Battle of Aboukir."

A small but select collection of near eastern and oriental art was being assembled at the Cincinnati Art museum as the result of the gift of approximately $150,000 from the heirs of Charles F. Williams.

Two important American 18th-century portraits were purchased by the City Art Museum of St. Louis. These were Ralph Earle's (1751–1801) "Major Moses Seymour" (1789) and "Mrs. Moses Seymour and Son."

The Portland (Ore.) Art museum purchased, with the aid of several donors, the outstanding collection of Northwest Coast American Indian Art assembled by Axel Rasmussen, a former schoolteacher and superintendent of schools in Skagway, Alsk. This collection consists of about 5,000 objects and includes masks, potlatch boats, house posts, totem poles, etc.

The William Rockhill Nelson Gallery of Art in Kansas City, Mo., held a gala celebration of its 15th anniversary and put on view a group of new acquisitions. Outstanding among these was a statue of St. Barbara (*c.* 1570) by the French sculptor Germain Pilon; four Roman portrait busts, including the emperors Lucius Verus and Caracalla; and a stone guardian lion, Chinese, of the T'ang dynasty (A.D. 618–907).

In Chicago, Ill., the Art institute displayed three presents, all old masters of first quality. Mr. and Mrs. Joseph Winterbotham gave it El Greco's "Feast in the House of Simon"; from the Coburn fund the institute obtained Tintoretto's "Tarquin and Lucretia" (*c.* 1560) and from other funds came Magnasco's (1667–1749) spirited "Synagogue."

Perhaps the greatest collection to go to a museum during the year was received by the Baltimore museum as a bequest of Etta Cone. This collection, valued at $400,000, contained 350 paintings and 50 pieces of sculpture and included 10 Picassos, 39 paintings and 10 bronzes by Matisse (most important single group in any collection), top quality paintings by Gauguin, Van Gogh, Cézanne, Renoir and Corot. Miss Cone and her sister, Claribel Cone, were pioneer collectors of modern art. (*See* also ART EXHIBITIONS; ART SALES.) (F. A. Sw.)

British Commonwealth and Europe.—The year 1949 showed a steady improvement in the museums and art galleries of most countries of the commonwealth and British colonies and in those of Europe.

In London galleries were reopened at the British museum and the Victoria and Albert museum. At the former the Elgin marbles were on view again for the first time since 1940. The complete restoration of the Tate gallery was marked by its reopening in Feb. 1949. New galleries were opened at the Imperial War museum and at the Public Record office. Openings also took place in Edinburgh and the provinces, including a museum at Oxford devoted entirely to eastern art.

In the dominions there was steady progress though without any particularly spectacular developments. In the Union of South Africa the proposed commission to consider the further development of the research function of museums did not eventuate. In the British colonies one of the most interesting developments was the decision of the government of Nigeria to appoint a museum technical instructor to train Africans as museum technical assistants.

In France openings included three important museums in the Palais de Chaillot, the Musée de l'Homme, Musée de la Marine and the Musée des Monuments Français which had been closed in April 1948 because of the occupation of that building by the United Nations general assembly. All the state museums in Belgium and the museums of Brussels were open once again to the public; the Musée des Beaux Arts of Liége, badly damaged in 1944, was being completely modernized. There was a move on foot to extend state control to provincial museums. In the Netherlands the Rijks-museum was being systematically reorganized and the picture galleries were now open to the public. At the Stedelijk-museum 70 exhibitions of modern art had already been held since the liberation in 1945. The Museum of Archaeology, Warsaw, Poland, which was looted by the Germans in 1939 and in consequence closed throughout World War II, had recovered about half of its collections and most of its furnishings; it was installed in the beautiful Lubomirski palace toward the end of 1949. There was little news of improvements in museums in Germany; but the Deutsches museum resumed publication of its technical handbooks and the Goethe Haus at Frankfurt was restored and reopened. In Austria, Greece, Italy and Norway there was a steady but not spectacular improvement in the museum situation but, as in Germany, there could be little hope yet of permanent reconstruction or building in most of these countries. Sweden had a series of outstanding museums and, considering its limited population and resources, was probably the best country in Europe for museum buildings and display techniques.

The International Council of Museums (I.C.O.M.) decided to set up a committee to consider encouraging the various countries who were members of U.N.E.S.C.O. to publish directories of museums; only seven countries had so far produced such directories after World War II. Late in 1949 U.N.E.S.C.O. published an 18-page pamphlet entitled *Art Museums in Need*, which reviewed the war damage to museums in Europe and Asia and appealed for funds to assist in their reconstruction. (S. F. MM.)

Music.

A study of representative programs of the year 1949 revealed the continuation of two trends which had been observed in preceding years. Music, at least in its measurable aspects, continued the concert upsurge which began soon after World War II, and it continued to enjoy its own quantitative increase. Festivals were numerous in Austria, Belgium, the British Isles, Czechoslovakia, France, Germany, the Netherlands, Italy, Norway, Poland, Sweden, Switzerland, the United States and Yugoslavia. In surveying the field of festivals, some reporters found signs of a spirit of co-operation among European nations. As an example, the Holland Festival foundation planned to invite representatives of the Salzburg and Edinburgh festivals to a meeting for the purpose of discussing possibilities of co-ordination.

Representative Compositions Introduced in 1949

Composer	Country of Residence	Type and/or Name of Composition
Alfano, Franco	Italy	*Dr. Antonio* (opera)
Andriessen, Hendrik	Netherlands	*Philomela* (opera)
Antheil, George	U.S.	*Symphony No. 6*
Arnell, Richard	England	*Symphony No. 4*
Bartók, Béla	U.S.	*Viola Concerto*
Bernstein, Leonard	U.S.	*Symphony No. 2 for Piano and Orchestra*
Bliss, Arthur	England	*The Olympians* (opera)
Bloch, Ernest	U.S.	*Guignol* (opera buffa)
Britten, Benjamin	England	*Spring Symphony*
Escher, Rudolf	Netherlands	*Concerto for Strings*
Hindemith, Paul	U.S.	*Concerto for Flute, Oboe, Clarinet, Bassoon, Harp and Orchestra*
Jacobi, H.	Israel	*Symphonic Prologue*
Landré, Guillaume	Netherlands	*Symphonic Music for Flute and Orchestra*
Malipiero, G. Francesco	Italy	*Piano Concerto No. 3*
Martin, Frank	Switzerland	*Golgotha* (oratorio)
Mennin, Peter	U.S.	*The Cycle: Symphony No. 4*
Messiaen, Olivier	France	*Turangalila, Symphony*
Mignone, Francisco	Brazil	*Alegrias de Nossa Senhora* (oratorio)
Milhaud, Darius	U.S.	*Quartets Nos. 14 and 15*
Phillips, Burrill	U.S.	*Don't We All* (opera)
Poulenc, Francis	France	*Sonata for Cello and Piano*
Prokofiev, Sergei	Russia	*Symphony No. 6*
Rabaud, Henri	France	*Marouf* (opera)
Refica, Licinio	Italy	*Margherita da Cortona* (opera)
Sonzogno, G. S.	Italy	*Regina Uliva* (opera)
Sowerby, Leo	U.S.	*Symphony No. 4, in B*
Thompson, Randall	U.S.	*Symphony No. 3 in A Minor*
Wellesz, Egon	England	*Symphony No. 2*

Australia had some troubles in attempting to raise orchestral standards as a result of a ruling by the local musicians' union which prohibited immigrant British musicians from obtaining membership in the union until such musicians had been in the country for ten years. Foreign musicians were barred from membership entirely. Later in the year the situation was relaxed when certain English players were admitted to union membership and allowed to play in Australian orchestras. A permanent Australian Opera and Ballet company was launched in Melbourne under sponsorship of the National Theatre movement. In an attempt to bring an increased understanding of contemporary music to the public, there was also a revival of the Australian section of the International Society for Contemporary Music with conductor Eugene Goossens serving as president.

Music and musicians continued to obtain encouragement and some direct support from the British government, which took over the lease of Covent Garden in London and began subsidizing opera there to the amount of about $400,000 a year. One of the unusual compositions of the year was Benjamin Britten's audience-participation experiment in children's opera, *Let's Make an Opera.* Opera, particularly chamber opera, was again prominent in the productions of the year. An interesting outgrowth was the English Opera group which Benjamin Britten stated was similar to the numerous opera workshops in the United States except that it was entirely professional and operated only in the summer, thereby taking advantage of a period in which singers were usually free.

The *premières* listed in the above table constitute only

JASCHA HEIFETZ (left), violinist, Artur Rubinstein, pianist, and Gregor Piatigorsky, cellist, rehearsing for a series of chamber-music concerts given at Ravinia park, Ill., in Aug. 1949, when the trio played together for the first time

a small portion of the new works heard by the British public, which enjoyed a good musical year in 1949. Not only were they extremely active themselves, but they invited and patronized performances by various organizations of other countries. At the Edinburgh festival, for example, visiting groups included the Berlin Philharmonic orchestra, the Swiss orchestra, and the Orchestre du Conservatoire from Paris.

France contributed at least its share of new scores, *premières,* and festivals. In memory of Henri Rabaud, there was a performance of his opera, *Marouf.* Some observance in the form of small recitals was also made of the 25th anniversary of the death of Gabriel Fauré. There were of course many recitals and programs given in commemoration of the centennial of Chopin's death, as there were throughout the world. The festival at Besançon was an interesting example of the internationalism in many French festival programs and general programs. While two of the concerts of the festival featured contemporary French music, another consisted entirely of German music. Visiting festival artists included Wilhelm Furtwaengler, Andrés Segovia, and Magda Tagliafero. Other musical "commodities" imported by France included the Orchestre de Chambre of Stuttgart.

Although faced with the problem of surmounting obstacles created by the currency reform, Germany was fast regaining her artistic position and reputation in 1949. Almost every moderately sized town had its own State Theatre with drama, opera and ballet presented by resident companies. Radio deserved recognition for presenting many modern works, including *premières* of Arnold Schoenberg's *Violin Concerto* and Paul Hindemith's *Cello Sonata.* Of particular interest was a three-week summer course for modern music in Darmstadt, the course being reported as a "radio festival." The Berlin Philharmonic, playing every Sunday morning and Monday evening, was well housed in the U.S. zone in a former motion picture theatre. Performances of opera were coloured by the political zone in which they were performed; comparatively little Wagner was given, ostensibly because of the lack of suitable voices. Economic restrictions also compelled artists and conductors to alternate between the Staats, Staedtische and the Komische Opera houses in northern Germany. One of the most active cities was Hamburg, where opera under the leadership of Gunter Rennert had climbed to considerable heights. Representative performances included Britten's *Peter Grimes;* Gottfried von Einem's *Danton's Tod;* and Herman Reutter's *Saul.* Of interest to the future was the fact that the Wagnerian property, including the Festspielhaus in Bayreuth, was returned to the family early in 1949. The composer's two grandsons were reported working toward the goal of re-establishing the famous Bayreuth Wagner festival.

The Salzburg festival presented four weeks of distinguished music to an audience of international aspect.

At Athens, Greece, the Bureau Artistique d'Athens arranged for a visit of distinguished artists and also effected an artistic exchange between Greece and Turkey The bureau sponsored the first appearance of Economides with the Istanbul Municipal orchestra and Gemal Rechid, leader of that orchestra, came to Athens to lead the state orchestra. Each conductor had at least two concerts during his guest visit.

The Netherlands continued to supplement the work of its fine Bach society and its symphonic orchestra, the Concertgebouw of Amsterdam, with operatic activity. At the third annual Music festival in Amsterdam and Scheveningen the concert audience heard the music of such modern Dutch composers as Alphons Diepenbrock, Willem Pijper, and Johan Wagenaar. The Dutch government and the city of Amsterdam agreed to meet half the budget of the new Netherlands Opera until 1955.

Israel also enjoyed an active season. The Israel Broadcasting System re-established its Tuesday night concerts and continued Saturday afternoon broadcasts devoted to opera and contemporary music. The 75th birthday of Arnold Schoenberg provided impetus for a number of concerts and broadcasts. The Israel Philharmonic, with Paul Paray musical director, was increased from 73 to 90 players and was scheduled for 11 subscription concerts, each with 7 performances. The second concert series given by this organization was the Israel *première* of M. Mahler-Kalkstein's *Second Symphony.* Earlier, the orchestra under Izler Solomon introduced the Jerusalem composer H. Jacobi's *Symphonic Prologue.*

In Italy, music attracted some of the largest crowds of the year. It was claimed 350,000 visited Rome's summer opera, with a seating capacity of approximately 10,000. In the field of composition, Italy remained primarily a country of opera. One of the unique features of 1949 was a congress held in Milan by representatives of the 12-tone school of composition, attended by 30 delegates from various countries. The congress presented a series of concerts, one orchestral and two of chamber works, conducted by Hermann Scherchen. Composers whose works were presented included Ernst Krenek, Wallingford Riegger and Arnold Schoenberg, of the United States; Luigi Dallapiccola, and C. Togni from Italy; S. Gemnity from Hungary; and K. A. Hartmann from Germany.

Japan, in addition to continuing its own musical culture, was showing additional evidence of the effect of western art. In Tokyo, Gian-Carlo Menotti's opera *The Old Maid and The Thief* had seven performances by the Negato Miko Opera company.

Occidental music continued to develop in Korea in spite of a lack of money, music and instruments. The Korean orchestra, which early in 1948 had split into two groups, was again functioning as one orchestra consisting of 70 Koreans by the beginning of 1949. The work of the orchestra was not confined to the capitol, Seoul, and occasional trips were taken to nearby cities. In addition a chamber music series parallelled the symphony programs.

By the time the Soviet Composers' union had assembled at the Moscow conservatory the new works listed as the 1949 output had reached at least 220. Examples were Dmitri Shostakovich's new oratorio *The Song of the Forests,* the symphonic poem by Vano Muradeli, *The Taking of Berlin,* and Aram Khachaturian's *The Battle of Stalingrad.* Sergei Prokofiev's *Sixth Symphony,* though an item that had incurred soviet displeasure, reached the United States for a *première* by the New York Philharmonic-Symphony. Evidence that Prokofiev was again in favour could be derived from information that his new ballet based on *The Stone Flower* was to be included in the repertoire of the Bolshoi Theatre.

In the United States orchestras and conductors continued to make news. Representative orchestras, old and new, extended their seasons. Examples were the Cleveland orchestra, the Minneapolis Symphony, the Nashville Symphony, and the Tulsa Philharmonic. Sergei Koussevitzky retired from conductorship of the Boston Symphony and was succeeded by Charles Muench. The Chicago Symphony orchestra also acquired a new conductor —the Czechoslovakian, Rafael Kubelik. Antal Dorati and Walter Hendl began successful seasons with the Minneapolis Symphony and the Dallas Symphony orchestra respectively. Conductor Karl Kreuger resigned from the ailing Detroit Symphony orchestra. Hans Kindler resigned from the National Symphony orchestra and was succeeded by Howard Mitchell. Although the pavilion at Ravinia park near Chicago was destroyed by fire, the summer program was successfully carried out, in a huge tent which was once a B-29 hangar. A concluding chamber series at Ravinia brought Jascha Heifetz, Artur Rubinstein and Gregor Piatigorsky together for the first time in trio work.

A summary of new works performed in and about New York city indicated that 1949 was an encouraging year, for music. There were more than 500 performances, including 200 *premières.* In company with other nations the United States commemorated the anniversaries of Goethe and Chopin. A Goethe festival of prime significance was staged at Aspen, Colo. A variety of organizations, including orchestra managements, universities, corporations, radio, television and even private individuals, commissioned new musical works.

U.N.E.S.C.O.'s impact on the world of music continued. At its fourth session in Paris, a budget of $8,000,000 was planned for such projects as (1) A catalogue of contemporary U.S. orchestral works performed in the U.S. under the direction of Wayne Barlow; (2) A catalogue—first section—recordings of U.S. music under the direction of E. Lee Fairley and (3) A catalogue of solo and ensemble music under the direction of Harold Gleason. U.N.E.S.C.O. also made formal observance of the centennial of the death of Chopin. The main political dispute marring conference progress resulted from a discussion concerning extension of U.N.E.S.C.O.'s program in Germany. The extension was approved but only after considerable opposition. (F. B. C.)

Popular Music.—The importance of the American operetta style and the superiority of the stage songs, or "production numbers," to the routine output of Tin Pan Alley were established in 1949. Two musical shows, far in advance of all their predecessors in this field, provided the statistics for this triumph of good popular music, besides emphasizing the enormous gap that now existed between American musical comedies and the best of their foreign competitors. The two were *South Pacific,* fashioned by Richard Rodgers, Oscar Hammerstein II and Joshua Logan from the prize-winning *Tales* of James A. Michener, and *Kiss Me, Kate,* for which Cole Porter wrote both words and music, to a book by the Spewacks out of Shakespeare's *Taming of the Shrew.* Later came the Berlin-Sherwood-Hart *Miss Liberty,* which suffered only by comparison with its rivals.

"Some Enchanted Evening," sung by Ezio Pinza in *South Pacific,* was the most popular song of the year, according to the Lucky Strike Hit Parade, which presented it for more than 20 successive weeks, 13 times in first place. Actually there were better songs than this in the Rodgers-Hammerstein score, three of which, "A Wonderful Guy," "Bali Ha'i" and "Younger Than Springtime," received adequate recognition from radio's high tribunal, while there was a general appreciation of such gems as "Happy Talk" and "There Is Nothing Like a Dame," not to speak of Mary Martin's delightful parody, "Honey Bun" or the more stodgy "This Nearly Was Mine."

Unquestionably *Kiss Me, Kate* contained the best words and music ever written by Cole Porter, and there would be no exaggeration in selecting as the finest song of the year his pseudo-Shakespearian "Were Thine That Special Face," which the general public had not yet discovered. "So in Love" appeared a dozen times on the Hit Parade and was definitely the most popular number in the show, although such earthy ditties as "The Life I Late Have Led," "Always True to You in My Fashion" and "Too Darn Hot" made a host of friends through the recordings of their original interpreters.

Miss Liberty, which pleased the public more than the critics, landed two songs in the Hit Parade, "Just One Way to Say I Love You" and "Let's Take an Old-fashioned Walk." But there were other numbers fully up to the Irving Berlin standard, including the plaintive "Homework," clearly descended from its composer's best previous song, the still unappreciated "Lazy."

Beside such genial workmanship, the machine-made "pops" of Broadway fared none too well, except for the quick and automatic turnover in sheet music and transitory records. The top song of 1948, "Buttons and Bows," held its own well into 1949, as did the two Loesser hits, "My Darling, My Darling" and "On a Slow Boat to China." But after that there was little to cheer about.

Most of the popular songs were definitely reminiscent of earlier music, particularly "Far Away Places" and "Cruising Down the River." The freakish "Riders in the Sky," written by a movie director, Stan Jones, actually borrowed its chief strain from "When Johnny Comes Marching Home," and the later "Mule Train" depended largely on rhythmic appeal and sound effects.

"Powder Your Face with Sunshine" had some individuality, t there was nothing particularly distinctive about "A Little rd Told Me," "Again," "A Room Full of Roses," "You're reaking My Heart," "That Lucky Old Sun," "Don't Cry, Joe" "I Can Dream, Can't I?," all of which reached the top of e Lucky Strike list more than once. The humorous "Baby, 's Cold Outside" was handicapped by radio censorship. Late the year a line by Stephen Foster suggested the currently ccessful "Dear Hearts and Gentle People" and Christmas ought the year's real novelty in "Rudolph, the Red-Nosed eindeer."

Conventional song writers had little chance in 1949 against e inspired work of such masters of the musical stage as odgers, Hammerstein, Berlin and Porter.

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Music in Industry.—Planned programs for functional music ere an important factor in management's drive during 1949 r higher productivity and lower costs in factories, plants, busi- ss offices, banks, utilities, retail stores and other business terprises. By providing and maintaining better and more at- active facilities for the physical and emotional needs of their nployees, companies were able to improve personnel morale d physical well-being to a measurable extent. As a direct fluence in counteracting and relieving the tedious monotony of echanized job routines, functional music, when planned and ogrammed by experts, won increasing recognition and accept- ce from management. It became an established addition to oductive employee facilities and enlightened personnel re- tions.

Significantly, retail merchants mindful of the growing compe- ion for the customer's dollar made effective use of function- ly designed music as an element in their public-relations pro- am to create a distinctive store-wide personality and a pleas- t environment for their customers.

Apparently influenced by the functional success of wired usic in plants, offices and stores, FM radio stations, casting out for sources of revenue, attempted to broadcast experi- ental programs of so-called "background" music and com- ercial spot announcements to fixed-frequency receivers in permarkets and public transportation vehicles. Surveys showed at large segments of the travelling public were opposed to this mmercialization of background music. (*See* also RADIO.)

(X.)

Recordings.—By the end of 1949, 17 recording firms had ecided to release recordings of so-called LP (long playing) atters at 33⅓ r.p.m. Companies which followed the lead set Columbia in this field included Allegro, Cetra-Soria, Concert all, Mercury and Vox. Capitol released material with 45 .m., thus joining ranks with RCA Victor. There was some idence toward the end of the year that all major record com- nies would attempt to effect a compromise concerning pro- iction and availability of disks at the various speeds.

English Decca, under the label of "London Records," ar- nged to combine its full-frequency range process with 33⅓ .m. microgroove recording. Advance examples of this tech- que included a recording of Béla Bartók's *Concerto for Or- estra* by the Concertgebouw orchestra of Amsterdam con- icted by Eduard van Beinum. Mercury experimented with a nargin control process" which approached standards attained the full-frequency range method.

The year 1949 saw a resurgence of releases. Opera recordings ere fairly numerous. Symphonies (including a respectable out- it of contemporary music), chamber works, Mozart centennial- lebration disks, folk material, and rare music all could be und in respectable quantity. Notable folk material recordings ere released by the Ethnic Folkways library. The Haydn society began an ambitious project of recording Haydn works. Allegro continued an interesting policy of submitting recordings of unhackneyed material, typical of which was the release, *Music of the Gothic Period and the Early Renaissance.*

FILMS OF 1949.—*Barber of Seville; Opera-On-Film Series* (6 films) (Official Films, Inc.); *Christmas Slippers* (Brandon Films Inc.); *Come Where My Love Lies Dreaming* (Admiral Pictures Inc.); *Vienna Philharmonic Series* (4 films) (Abelard Educational Films, Inc.).

(F. B. C.)

Music Library Association: *see* SOCIETIES AND ASSOCIATIONS.

Mustard Seed: *see* SPICES.

Mutton: *see* MEAT.

Narcotics and Narcotic Traffic.

The Commission on Narcotic Drugs of the United Nations at its fourth session in May 1949 made a number of decisions and recommendations with a view to suppressing illicit traffic and tightening controls over the production of opium and the distribution of all dangerous narcotic drugs. Progress was made toward the drafting of a new single convention to replace and simplify existing conventions and agreements. The commission considered the creation of only two control bodies—a policy-making body and an administrative body; a single secretariat for these two bodies; an international purchasing and selling agency for distributing opium; and an international clearing house for reviewing import permits covering narcotic drugs before issuance of export authorizations.

A subcommittee, composed of representatives of the principal opium-producing countries, India, Iran, Turkey, the U.S.S.R. and Yugoslavia, was appointed to consider the desirability of convening a conference to conclude an interim agreement for limiting the production of raw opium to medical and scientific needs. The subcommittee agreed that an *ad hoc* committee of the Commission on Narcotic Drugs composed of the representatives of these principal opium-producing countries should meet in Turkey.

The Commission on Narcotic Drugs having drawn the attention of the Economic and Social council to the large volume of illicit traffic in narcotic drugs throughout the world, the council adopted the following resolution:

> The Economic and Social Council . . . recommends that all States should
>
> (1) increase their efforts to detect and suppress the illicit production of opium, coca leaves and other raw narcotic materials from which narcotic drugs are produced, and the illicit manufacture of these drugs, as well as of those produced synthetically;
>
> (2) apply stringent measures of control to the trade in, the distribution and transportation of narcotic drugs, paying special attention to the smuggling of drugs in aircraft;
>
> (3) strengthen measures for apprehending traffickers and subject them to severe penalties.

The Commission of Inquiry on the Coca Leaf started work in Peru the second week in September. It was appointed to study the economic and social effects of the chewing of the coca leaf and to recommend measures for limiting the production of the coca leaf to medical and legitimate requirements.

Synthetic Narcotics.—An important accomplishment of 1948 in the international control of narcotic drugs had been the approval by the general assembly of the United Nations of a protocol to bring under international control manufactured drugs outside the scope of the convention of 1931. This new protocol, unanimously approved by the general assembly on Oct. 8, 1948, and thereafter opened for signature, brought all synthetic narcotic drugs under international control. If the World Health organization found that a drug is capable of producing addiction or of conversion into a product capable of producing addiction, it would notify the secretary-general of the United Nations, who would immediately inform all states members of the United Nations, nonmember states parties to the protocol, the Commission on Narcotic Drugs and the permanent central board. On receipt of this information the parties to the protocol would apply to the drug the appropriate control laid down by the 1931 convention.

U.S. Traffic.—Trends in the illicit drug traffic in the United States indicated that some of the old sources of supply, such as Turkey, France and Italy, were active as in prewar years. In addition, it appeared that India and Hong Kong were bases for the smuggling of narcotic drugs.

Raw opium seizures increased in the Atlantic coast area. Turkey and other near eastern countries served as sources of supply of raw opium and hashish.

Indian raw opium seizures were heavy in the Atlantic coast area, being second in quantity to those of Turkish opium. Iranian raw opium seizures, identified definitely as to origin, were fewer than Turkish and Indian opium seizures, but it was believed that a number of unidentified seizures were of Iranian origin.

There was a disturbing increase in the quantity of cocaine seized. Reliable information indicated that cocaine for smuggling into the United States was available in large quantities in Peru, Chile and Bolivia. Seizures of marijuana also increased.

Accidental deaths and suicides directly attributable to the effect of barbituric acid drugs continued to increase. The lack of adequate control prompted the introduction in congress of two bills to bring these drugs under federal narcotic laws. The administration opposed these measures on the grounds that there was no smuggling and no interstate illicit traffic and therefore the problem should be controlled by the states. (*See* also DRUG ADMINISTRATION, U.S.)

BIBLIOGRAPHY.—*United Nations Report of the Commission on Narcotic Drugs to the Economic and Social Council on the Fourth Session, held at Lake Success, New York, May 16 to June 3, 1949* (document no. E/1361, June 7, 1949); "Traffic in Opium and Other Dangerous Drugs for the year ended December 31, 1948," U.S. Treasury Department, Bureau of Narcotics (1949). (H. J. A.)

National Academy of Sciences: *see* SOCIETIES AND ASSOCIATIONS.

National Archives: *see* ARCHIVES, NATIONAL.

National Association for the Advancement of Colored People: *see* SOCIETIES AND ASSOCIATIONS.

National Association of Manufacturers: *see* SOCIETIES AND ASSOCIATIONS.

National Association of State Libraries: *see* SOCIETIES AND ASSOCIATIONS.

National Budget: *see* BUDGET, NATIONAL.

National Bureau of Standards: *see* STANDARDS, NATIONAL BUREAU OF.

National Catholic Community Service: *see* SOCIETIES AND ASSOCIATIONS.

National Catholic Welfare Conference: *see* SOCIETIES AND ASSOCIATIONS.

National Congress of Parents and Teachers: *see* PARENTS AND TEACHERS, NATIONAL CONGRESS OF.

National Debt: *see* DEBT, NATIONAL.

National Education Association.

The National Education association of the United States held its 87th annual meeting and its 28th representative assembly at Boston, Mass., July 3–8, 1949. The assembly, with 2,875 delegates, was the largest in the association's history. The work of the association was carried on through 25 commissions, councils and committees, 29 departments and 15 headquarters divisions. In the international field, the association worked through the World Organization of the Teaching Profession, which held its third meeting in Berne, Switz., July 17–25, 1949. The association, which was in the fourth year of its Victory Action program (1946–51), made much progress in the activities of its committees, in public relations, in its work with state and local associations and in the field of standards for the preparation and certification of teachers. Particularly notable was the rapid development of its work in colleges and high schools known as Future Teachers of America. In May 1949 there were Future Teachers of America chapters in 271 colleges and universities, with a membership of 13,455. There were also active clubs in 408 high schools.

The association continued its campaign for federal aid for the operation of public elementary and high schools. S. 246, a bill which would provide $300,000,000 annually for this purpose, passed the U.S. senate on May 5, 1949, by a vote of 58 to 15.

"Making Democracy Work" was the theme for American Education week, Nov. 6–12, 1949. The association was organized in Philadelphia, Pa., in 1857. It had, on May 31, 1949, a membership of 427,527, and its affiliated state associations had a membership of 824,395. There were 2,863 affiliated local associations in 1949, as compared with 2,369 in 1948. Its official organ is the *NEA Journal*, which is issued to all members monthly except June, July and August. The president for 1949–50 was Andrew D. Holt, executive secretary-treasurer, Tennessee Education association, Nashville, Tenn.; executive secretary was Willard E. Givens. (*See* also EDUCATION.) (J. E. Mo.)

National Gallery of Art: *see* SMITHSONIAN INSTITUTION.

National Geographic Society.

During the summer of 1949, the National Geographic society, in co-operation with the California Institute of Technology, launched a sky survey to map the reaches of outer space. This survey was being made by the new 48-in. wide-angle Schmidt photo telescope at the Palomar observatory in California. The work was to take about four years and would provide students of astronomy with a sky atlas of some 2,000 photographic plates showing billions of stars. Before the project was officially opened, test exposures had recorded one new minor planet.

Another scientific undertaking, in the field of cosmic ray research, resulted in the discard of the once widely-accepted theory that the sun possesses a permanent magnetic field somewhat similar to that of the earth. The study was conducted through the joint efforts of the society, the Bartol Research foundation of the Franklin institute, Philadelphia, Pa., and the national defense board of Canada. Evidence that the sun does not act as a magnet to keep cosmic rays from entering the earth's atmosphere was obtained by ray-recording Geiger counters sent up in high altitude (20 mi.) balloons over Churchill, Manitoba, Canada. Later, in checking the findings, a new altitude record of 136,000 ft. or almost 26 mi. was established for instrument-carrying balloons in such research.

Continued in 1949 was the investigation of the aurora borealis, or northern lights, begun by the society and Cornell university in 1938. The aurora's glow, it is now believed, comes from energy given off when electrified particles thrown out by the sun collide with atoms in the earth's rarefied upper atmosphere.

A wealth of material gathered during the 1948 solar eclipse was further studied and evaluated in 1949, yielding new data on the shape of the earth and intercontinental distances. This material, collected by observers covering the eclipse track from Burma to the Aleutians, was acquired through co-operation between the society, the U.S. army, navy and air force, the national bureau of standards and state and commerce departments.

In the natural history field, a scientific expedition dispatched to Nepal by the National Geographic society, Yale university the Smithsonian institution, returned with a rare specimen he spiny babbler. Besides this bird, the first to be taken in e than a century, the party brought back numerous other l and animal trophies from the remote Himalayan land, as l as a unique and striking photograph of Mount Everest n the southeast.

nother expedition, into primitive Arnhem Land of northern stralia, came out early in the year with thousands of photo- phs and articles from native life, plus extensive collections marsupials, birds, fish and botanical specimens. The fruit of ht months' exploration in 1948 by representatives of the iety, the Smithsonian and the Australian government, this asure of natural history and anthropological lore was being ided between the Smithsonian and Australian and certain er institutions.

n Panamá, the use of helicopters to locate digging sites high- ted a new chapter in the archaeological program that had n carried on in various parts of Mexico and Central America ce 1938. Sponsored by the society and the Smithsonian, this est expedition found fresh evidence to support belief in the nmon origin of widely separated pre-Columbian civilizations. o new archaeological cultures also were discovered, one in stern Panamá, the other east of the Canal Zone.

rom the Air Force association, in 1949, the society received itation of honour for outstanding public service in providing ps for wartime airmen. In its regular work during the year, National Geographic's Cartographic department produced ir large wall maps covering the British Isles, Europe and the ar East, the Top of the World, and Classical Lands. Issued supplements to the magazine, approximately 7,352,000 copies re distributed.

Published in the *National Geographic Magazine* during the r were more than 1,000 colour photographs, including 278 roductions of paintings.

The society's members at the end of 1949 numbered about 65,000. Headquarters of the society are in Washington, C. Officers: president and editor, Gilbert Grosvenor (who in 9 completed 50 years of service as editor); vice-president l associate editor, John Oliver La Gorce; secretary, Thomas McKnew; treasurer, Robert V. Fleming. The society's re- rch committee: chairman, Lyman J. Briggs; vice-chairman, exander Wetmore. (G. Gr.)

tional Guard.

During 1949 the U.S. national guard reached its greatest strength. As the year led, it counted more than 395,000 officers and men in its ks, an increase of approximately 86,000 since Dec. 31, 1948. ey included approximately 352,000 in 4,727 federally recog- ed army units and 44,000 officers and men in 514 air units in 48 states, the District of Columbia, Hawaii, Puerto Rico l Alaska. Six months before the end of the fiscal year the ional guard found itself close to the budgetary strength ceil- of 399,500 established for the 1950 fiscal year. A total of 196 new recruits joined the national guard during the two- nth nation-wide recruiting campaign which began on Sept. 19.

The air national guard completed the basic organization of its otted 514 units by the end of May. The 4,727 organized ny units represented 90.7% of the 5,312 such units allotted national guard. Organization of national guard tactical units wed equivalent progress. Of the 25 infantry and 2 armoured isions, 18 infantry divisions and 1 armoured division were npletely organized. The remaining 8 divisions were close to npletion, lacking only 45 units. Of the 20 national guard imental combat teams, 17 were completely organized, as were of the 659 nondivisional anti-aircraft artillery units. Also anized were the 72 fighter squadrons, the 12 light bombardment squadrons and supporting units of the air national guard.

Having already reorganized its tactical units to add greater efficiency, mobility and fire power, the national guard further kept pace with its increased strength and defensive-offensive mission during 1949 by adding eight armoured cavalry regiments to its troop basis and reorganizing the air guard's aircraft control and warning squadrons to conform with the air force's Interim Defense plan.

Congress took further steps to benefit the members of the national guard together with those of other reserve components. Public law 108 provided disability benefits for guardsmen on a par with members of the regular military services; the Career Compensation act, granting pay increases to servicemen, also applied to the national guard. National guardsmen also were eligible for substantial retirement pay at the age of 60, after at least 20 years of cumulative service, if they otherwise met requirements.

Trained under the direct supervision of the army and air force, the national guard uses the latest type weapons and techniques. All courses and schools of the regular forces are open to guardsmen. The national guard's mission as a first-line member of the national defense team is to be trained and ready to take part in all types of operations, offensive and defensive, in the United States and overseas, in case of attack.

(K. F. C.)

National Income and National Product: *see* Income and Product, U.S.

National Insurance: *see* Relief; Social Security.

Nationalization of Industries: *see* Australia, Commonwealth of; Coal; Great Britain and Northern Ireland, United Kingdom of; Political Parties, British; Public Health Services; Public Utilities; Railroads.

National Labor Relations Board.

The National Labor Relations Board completed its first full fiscal year of enforcing Title I of the Labor Management Relations act, more commonly known as the Taft-Hartley act, on June 30, 1949. The Taft-Hartley act took the form of an amendment to the National Labor Relations act of 1935, which was more commonly known as the Wagner act.

The most important change in the federal statutory scheme for regulating labour-management relations was the new section 8b of the act, forbidding a labour organization or its agents to engage in certain activities which were proscribed as unfair labour practices. This section raised most of the novel questions which confronted the board during the first year. The principal practices forbidden include: the restraint or coercion of employees; the causing or attempting to cause employers to discriminate against employees on the basis of union membership; refusal to bargain in good faith; and engaging in certain types of secondary boycotts and strikes.

Entirely new was the prohibition of secondary boycotts, which presented some of the most difficult problems the board had to decide. One of the most difficult of these questions was that involving the so-called "free speech" section of the act, which permits both employers and unions to express arguments and opinions which contain no "threat of reprisal or force or promise of benefit." The board was called upon to reconcile this section with the provisions of the act which forbid unions to "induce or encourage" employees to engage in a secondary strike or boycott. A majority of the board decided that congress did not intend that the ban on secondary boycotts should be limited by the "free speech" proviso. Therefore, the board ruled, the 1947 act does not permit peaceful picketing by a labour organization for the purpose of supporting an illegal secondary strike or boycott.

Another major line of board decisions interpreting the new law grew out of the provision forbidding unions to engage in "restraint or coercion" of employees. The board held unanimously that congress intended this provision to outlaw physical violence and threats and other such coercive activities, particularly in connection with strikes and picketing. The board also held that this section prohibited mass picketing when it had the effect of forcibly blocking the entry of employees into a plant. It ruled further that a threat that an employee would lose his job unless he joined a union is banned by this provision.

Cases involving charges of unfair labour practices by employers also raised some novel questions. Mostly these were concerned with the employer's statutory duty to bargain with the representative of a majority of his employees. The act requires both employer and unions to meet "at reasonable times and confer in good faith in respect to wages, hours, and other terms and conditions of employment." The board's ruling that this requires an employer to bargain about pensions, retirement plans and various types of group insurance plans was upheld by two U.S. courts of appeals; the supreme court declined to review the lower courts' decision.

Another question which received attention of the board and the courts was whether an employer may make a wage increase without consulting the collective bargaining representative of his employees. The board ruled that an employer may make such a unilateral increase only when collective bargaining has come to a genuine impasse. The supreme court upheld this view, ruling that the board was correct in holding that it is an unfair practice for an employer to make a wage increase larger than he has offered a majority union in collective bargaining.

These rulings were among the high lights of those made by the five board members in the 484 unfair labour practice cases which they decided during the fiscal year ending June 30, 1949. All told, the board issued formal decisions in a total of 3,365 cases during the 1949 fiscal year. This was an increase of 63% over the 2,054 issued the previous year.

During the 1949 fiscal year, the agency experienced the busiest year of its 14-year history. It processed a total of 32,796 cases of all types. This was an increase of approximately 12% over the 29,151 handled in the preceding fiscal year. The board closed the 1949 fiscal year with 5,722 cases of all types on its dockets. This was a reduction of approximately 54% from the 12,644 cases on the docket, July 1, 1948.

The office of the general counsel issued formal complaints in 617 unfair practice cases. This was more than double the 305 issued in fiscal 1948. The general counsel's staff, on behalf of the board, conducted a total of 20,720 board elections of all types. In these elections, a total of 2,004,418 employees cast valid ballots. Of the elections conducted, 15,074 were polls to determine whether the employees wished to authorize their unions to negotiate union-shop contracts requiring employees to join the union as a condition to retaining their jobs. The employees authorized union-shop contracts in 14,581 such polls, or 96.7%. The remaining 5,646 elections were held to determine whether the employees wanted a collective bargaining representative and, if so, to determine their choice of representative. Bargaining representatives were chosen in 3,939 elections, or approximately 70%.

Charges of unfair labour practices were filed in 5,314 cases. Of these, 4,154, or approximately 78%, involved charges against employers. In the remaining 1,160 cases, charges of unfair practices were levelled against the unions. A large proportion of the cases involving unfair practices were settled by agreement between the parties.

Petitions for injunctions to halt alleged unfair labour practices were filed by the general counsel during the 1949 fiscal year in 32 cases, all against unions. This compares with 21 injunctions requested in fiscal 1948. Of the injunctions sought, 19 were granted, 3 were denied and 6 were withdrawn as a result of cessation of the alleged unfair practices or as a result of board decisions in the cases. The remaining 4 petitions were pending in the courts at the close of the year.

Before a labour organization may seek certification as a bargaining representative or file charges of unfair labour practices, each of its officers is required by the act to file an affidavit swearing that he is not a Communist or a supporter of subversive activities. These affidavits must be renewed annually. The union also must file certain annual financial reports with the department of labour. At the close of the 1949 fiscal year, 186 international unions and 9,101 local unions were in current compliance with the affidavit and filing requirements. Altogether, 16,967 local unions had complied, at one time or another, since passage of the amended act. Up to June 30, 1949, 156,197 officers of local unions had filed non-Communist affidavits. (*See* also LABOUR UNIONS; LAW; STRIKES.) (P. M. HG.)

National Lawyers Guild: *see* SOCIETIES AND ASSOCIATIONS.

National Mediation Board.

The year 1949 marked completion of 15 years of administration by the National Mediation board under the amended Railway Labor act. Jurisdiction of the board, confined originally to common carrier railroads, was extended to common carriers by air under amendments to the act approved April 10, 1936.

It is the duty of the board to aid in maintaining industrial peace in the railroad and air-line industries and thereby prevent interruptions to the free flow of commerce between the states. There are approximately 1,000 separate operating carriers employing more than 1,500,000 workers subject to the dispute-settling procedures of the act. In discharging its duty under the law, the work of the board falls into two general categories: (1) mediating disputes involving changes in rates of pay, rules or working conditions; and (2) designating collective bargaining representatives in disputes over representation which arise among employees.

The tension which had characterized railroad and air-line labour relations during the postwar years did not lessen during 1949. Threatened strikes frequently occurred. The underlying causes of these threats involved many novel and perplexing problems. In the vast majority of cases patient and persistent efforts to find a peaceful solution through mediation were effective and the threatened work stoppages averted. Of the total of 309 cases mediated by the board, there were only six reportable strikes during the year and two of these were minor stoppages of less than 24 hr. In the major disputes which arose during the year, the act continued to fulfil its basic purpose: *i.e.*, prevent work stoppages by making and maintaining agreements through the orderly processes of collective bargaining. For example, during 1949, wage disputes involving train and engine service employees on more than 99% of the nation's railroad mileage were settled in direct negotiations. In addition, a dispute between the railroads and their nonoperating employees was settled in direct negotiations following recommendations of an emergency board appointed under section X of the act. This settlement provided for wage increases and was of particular far-reaching significance in that it established a 40-hr. work week for approximately 1,000,000 railroad workers.

During 1949 the board reported that an increasing degree of harmony was exhibited in employer-employee relationships in e air-line industry. This was credited in large measure to ore experience and a better understanding of bargaining pro-dures under the act. (*See* also RAILROADS.)

BIBLIOGRAPHY.—Annual report of National Mediation board for fiscal ar ended June 30, 1949. (T. E. S.)

ational Military Establishment: *see* GOVERNMENT DE-RTMENTS AND BUREAUS.

ational Museum: *see* SMITHSONIAN INSTITUTION.

ational Parks and Monuments.

Visitors to U.S. national parks d other areas administered by the national park service talled 31,864,180 in 1949, an increase of more than 2,250,000 er the record of 1948. Areas which attracted more than 1,000,-o visitors each were Great Smoky Mountains National park North Carolina-Tennessee; Rocky Mountain National park Colorado; Yellowstone National park in Wyoming-Montana-aho; Platt National park in Oklahoma; Shenandoah National rk in Virginia; the Blue Ridge parkway in Virginia-North rolina; the Lincoln memorial in Washington, D.C.; Lake ead National Recreational area in Arizona-Nevada; and Lake exoma National Recreational area in Texas-Oklahoma. The ke Texoma area was transferred to the jurisdiction of the rps of engineers on June 30, 1949.

Greater participation by visitors was noted in the interpretive, educational, facilities, such as campfire talks, nature walks, tomobile caravans, museum exhibits and library collections ovided by the national park service in most of the parks and onuments.

A joint decision by the secretary of the army and the secre-ry of the interior to drop the Glacier View Dam project in ontana from plans for development of the Columbia river sin saved nearly 20,000 ac. of wilderness in Glacier National rk from destruction by flooding. A threat to the Grand Can-n in Arizona was averted with the rendering of an adverse cision by the department of the interior on the proposed Kai-b tunnel in Arizona which would have diverted from the can-n virtually the entire flow of the Colorado river, the agent hich created this awe-inspiring chasm.

Three areas—all of historic significance—were established in 49. The massive fortifications in San Juan, Puerto Rico, were signated as San Juan National Historic site, with the U.S. my to have primary jurisdiction over the old Spanish-built rtifications, and the national park service to be responsible for ndling visitors and interpreting the site to the public. Bluff-nds along the Mississippi river containing unusual prehistoric rth mounds were donated to the federal government by the ate of Iowa and established as Effigy Mounds National monu-ent. The De Soto National memorial, to commemorate the nding of Ferdinando de Soto's expedition in Tampa bay, was tablished in the vicinity of Bradenton, Fla. Land for the emorial was donated to the federal government by Dr. and rs. W. D. Sugg and Dr. and Mrs. L. W. Blake of Bradenton.

Near the close of 1949, deeds to approximately 33,500 ac. of nd in the Jackson Hole region of Wyoming were donated to e federal government by John D. Rockefeller, Jr., for admin-ration as part of Jackson Hole National monument.

Sizable parcels of land were acquired for Everglades National rk in Florida and Great Smoky Mountains National park in orth Carolina and Tennessee. At the year's close, areas ad-nistered by the national park service totalled 181, with a mbined gross area of 21,754,134 ac.

Other noteworthy events and developments of 1949 were e dedication of Theodore Roosevelt National Memorial park North Dakota and the Death Valley Centennial program held in Death Valley National monument, California-Nevada, both of which attracted throngs of visitors; establishment by the secretary of the interior of an advisory committee for the Independence National Historical Park project, Philadelphia, Pa.; and enactment of legislation authorizing establishment of St. Croix Island National monument in Maine. (N. B. D.)

Canada.—The Fundy National park was officially opened during the summer of 1949. The 80 sq.mi. scenic and recreational area in New Brunswick was proclaimed a national park in April 1948, and in 1949 parliament approved the name "Fundy." Developments in the national parks included additional work on park highways in Waterton Lakes park, Prince Albert National park, Riding Mountain National park, Cape Breton Highlands National park and on the highways leading to the mountain national parks. Facilities for the protection of the park forests were also improved. During the first four months of the fiscal year 46.5% more visitors entered the parks compared with the same period in 1948. In August 1949 visitors to the parks numbered 485,133.

Great Britain.—In March 1949 the National Parks and Access to the Countryside bill was published. The main objects of the bill were to provide for the designation of national parks in England and Wales and for the establishment of a National Parks commission. The commission, appointed by the minister of town and country planning, would select any extensive and beautiful area which it considered suitable and would encourage the provision and improvement of facilities for visitors to the national parks.

The six National Forest parks, administered by the Forestry commission, became increasingly popular. More camping sites were provided and facilities for visitors improved. Additional guides to the forest parks were published, including booklets on Hardknott and Glenmore.

Kenya.—The government took over the ancient ruined city of Gedi, 10 mi. south of Malindi, as a national park. Investigation and conservation work was to be carried out by J. S. Kirkman, warden of Kenya's historic sites. The ruins of the city, which include five mosques, a ruler's palace and many large houses were first discovered 25 years before.

New Zealand.—Extending south from a track between Te Anau and Milford sound to Lake Manapouri an area of 400,000 ac. of Fiordland National park in South Island was proclaimed a bird sanctuary.

Northern Rhodesia.—In September the Legislative council passed a motion providing for the proclamation of an area of 8,650 sq.mi. in the southern, central and western provinces as a national park. The area was situated entirely in native trust lands and was almost entirely infested with tsetse fly and had extremely poor soil. It was almost uninhabited except in a small area along the Kafue river.

Southern Rhodesia.—A National Parks act was passed providing for establishment of national parks and for the preservation of wild animal and fish life and vegetation and objects of geological, ethnological, historical or other scientific interest; and for the control and management of such parks by a National Parks Advisory board appointed by the minister of internal affairs. The act scheduled the following areas as national parks: Wankie game reserve (3,256,998 ac.); Robins game sanctuary (25,398 ac.); Kazuma Pan game reserve (48,640 ac.) and Chimanimani National park (20,213 ac.). The first three were situated in the Wankie native district and the last in the Melsetter district. The act gave provision for the governor to proclaim any other area as a national park.

FILMS OF 1949.—*Death Valley Monument; Glacier Park; Yellowstone —Grand Tetons; Yosemite National Park* (Paul Hoefler Productions); *Denizens of Death Valley* (Bailey Films Inc.); *Mammoth Cave, Ky.; Wind Cave, S.D.* (National Park Films).

National Wealth: *see* WEALTH AND INCOME, DISTRIBUTION OF.

Natural Gas: *see* GAS, NATURAL.

Nauru: *see* TRUST TERRITORIES.

Navies of the World.

At the end of 1949 only two navies could be considered as being first class, that of the United States and that of Great Britain, the former being fully three times larger than the latter. The fleets of the U.S.S.R., France and Italy could be reckoned as second class, and those of Argentina, Australia, Brazil, Canada, Chile, Netherlands, Spain, Sweden and Turkey as third class. Several of the smaller navies renewed their strength by acquiring surplus warships from the United States and Great Britain. The relative strengths of the navies of the world are shown in the table.

Navies of the World, Dec. 1949

	Battleships	Battle cruisers	Fleet aircraft carriers	Light fleet aircraft carriers	Escort aircraft carriers	Cruisers	Coast defense ships and monitors	Fleet destroyers	Escort destroyers and frigates	Submarines
United States	15	2	28	9	66	69	1	363	244	172
Great Britain	5	—	6	6	1	25	2	111	167	68
U.S.S.R.	3	—	—	—	—	14	2	60	24	360
France	2	—	—	1	1	11	1	20	16	12
Italy	2	—	—	—	—	4	—	4	16	—
Argentina	2	—	—	—	—	3	1	11	8	3
Australia	—	—	—	1	—	3	—	10	14	—
Canada	—	—	—	1	—	2	—	11	15	—
Brazil	1	—	—	—	—	—	—	7	8	4
Chile	1	—	—	—	—	—	2	6	3	7
Turkey	—	1	—	—	—	—	—	12	—	10
Netherlands	—	—	—	1	—	2	—	7	3	8
Sweden	—	—	—	—	—	4	5	13	8	24
Spain	—	—	—	—	—	6	—	13	15	6
New Zealand	—	—	—	—	—	2	—	—	6	—
Peru	—	—	—	—	—	2	—	1	3	4
Greece	—	—	—	—	—	1	—	2	8	6
India	—	—	—	—	—	1	—	3	5	—
Norway	—	—	—	—	—	—	—	6	7	5
Portugal	—	—	—	—	—	—	—	5	8	6
China	—	—	—	—	—	—	—	4	10	—
Poland	—	—	—	—	—	—	—	2	—	4
Pakistan	—	—	—	—	—	—	—	2	4	—
Dominican Rep.	—	—	—	—	—	—	—	2	3	—
Rumania	—	—	—	—	—	—	—	2	—	1
Colombia	—	—	—	—	—	—	—	2	1	—
Thailand (Siam)	—	—	—	—	—	—	4	—	6	4
Denmark	—	—	—	—	—	—	—	—	12	3
Yugoslavia	—	—	—	—	—	—	—	—	3	7
Mexico	—	—	—	—	—	—	—	—	8	—
Venezuela	—	—	—	—	—	—	—	—	6	—
Cuba	—	—	—	—	—	—	—	—	5	—
South Africa, Union of	—	—	—	—	—	—	—	—	3	—
Belgium	—	—	—	—	—	—	—	—	3	—
Republic of Ireland	—	—	—	—	—	—	—	—	3	—
Iran	—	—	—	—	—	—	—	—	1	—
Ecuador	—	—	—	—	—	—	—	—	1	—
Burma	—	—	—	—	—	—	—	—	1	—

It became apparent during the year that the importance of the battleship and the cruiser had waned and that the various admiralties and navy departments were concentrating on the development of aircraft carriers, destroyers, submarines and frigates to counter the ever increasing menace of atomic weapons, more deadly aircraft and faster submarines.

Many battleships and cruisers of the two principal navies were broken up or discarded, together with prewar or war-built destroyers, submarines and smaller craft no longer required, but there were signs that this was the final reduction of the immense fleets of wartime to a postwar establishment commensurate with foreseeable needs and straitened economies.

The majority of the major warships of the principal nations were put in a state of preservation or refitted for placing in reserve, but many experiments were carried out with aircraft carriers, destroyers and submarines. While designs of the warships of the future were being prepared according to the lessons of World War II to counter the latest aircraft and submarines, most navies perforce made the best of existing warships by bringing them up to date or modifying them for new duties.

There were signs, however, that revolutionary types of warships were being prepared for the operation of atomic bombs, guided missiles, rockets and new antisubmarine and anti-aircraft weapons developed since the war, these ships being designed with novel types of propelling machinery such as atomic energy, hydrogen peroxide and gas turbines.

In most of the big navies there was a shortage of personnel to man operational ships, of which fewer than ever were in full commission. This was partly the result of a falling off in recruitment and the demobilization of wartime entries, but chiefly because of the long training in the handling of the complicated weapons and advanced scientific apparatus which an officer or enlisted man must undergo on shore before he is competent to control and maintain the equipment of modern warships.

Among the naval events of the year were the halt in the construction of the giant U.S. aircraft carrier "United States," the largest warship ever designed, only five days after it had been laid down on April 18; the trapping of the British sloop "Amethyst" by the Communists in the Yangtze river on April 20, its attempted rescue by the cruiser "London," destroyer "Consort" and destroyer "Black Swan," and its subsequent feat of navigation in escaping down the river to join the fleet on the night of July 30–31; the western European union naval Exercise "Verity" carried out by the combined fleets of Great Britain, France, the Netherlands and Belgium in July; the loss of the U.S. submarine "Cochino," which after two explosions in its battery room caught fire and sank off the north coast of Norway on Aug. 26 while on an arctic training cruise; the loss of the Argentine mine sweeper "Fournier," which sank in the Straits of Magellan on Sept. 22; the gamma ray tests on the obsolescent British cruiser "Arethusa" during the summer; and the scrapping at the end of the year of the oldest warship afloat in the world, the 148-year-old British man-of-war "Implacable," formerly the French "Duguay-Trouin," which was laid down in 1797, fought against the British at the battle of Trafalgar, was captured a fortnight later and served in, or latterly in close association with, the royal navy ever since.

United States Naval Strength.—Late in 1949 only 1 of the 15 U.S. battleships remained in full commission, the "Missouri," which led a task force of 10 warships on 2 separate midshipmen's training cruises to Great Britain and France during the summer. The battleship "Kentucky" and the battle cruiser "Hawaii," laid down during World War II, were still only 73% and 84% complete, respectively. The 27,100 ton aircraft carrier "Oriskany," modified from the original "Essex" class design while under deferred construction, was completed in December. Twelve other ships of the class were to be modified on similar lines to enable them to operate heavier aircraft. The fleet comprised 15 battleships, 2 battle cruisers, 37 fleet aircraft carriers, 66 escort carriers, 25 heavy cruisers, 44 light cruisers, 363 destroyers, 244 escort destroyers, 172 submarines, 195 mine craft, 122 patrol vessels, 844 amphibious craft and 537 miscellaneous vessels. The total strength of personnel was 394,500 in the navy and 87,000 in the marine corps.

British Naval Strength.—One battleship and 8 cruisers were removed from the effective list. Of the 5 remaining battleships none was in operational commission at the end of the year, the "Vanguard" being in the training squadron and the 4 of the "King George V" class relegated to reserve. There were 12 fleet aircraft carriers and 1 escort carrier. The large aircraft carrier "Eagle" was not completed, and her sister ship, "Ark Royal," was not launched. Little progress was made with the intermediate fleet carriers "Albion," "Bulwark" and "Centaur," and the remaining ship of the class, the "Hermes," was not launched. The light fleet carriers "Hercules," "Leviathan" and "Powerful" were still suspended. As a result of scrapping, cruisers were luced to 25. No building progress was made with the cruisers lake," "Defence" and "Tiger" begun in 1942–43 and stopped 1946. Destroyers numbered 111. Two of the 8 large destroy- of the "Daring" class ordered during World War II were nched. There were 167 frigates, including 50 former escort stroyers of the "Hunt" group, 24 former sloops and 26 former rvettes, which were all reclassified as frigates. Submarines mbered 68, including 4 "midgets." Other vessels included 2 nitors, 3 fast mine layers, 3 aircraft maintenance carriers, 66 et mine sweepers and many coastal craft, miscellaneous ves- s and auxiliaries. Naval personnel numbered 146,000.

U.S.S.R.—The soviet navy returned 1 battleship, 7 destroyers d 3 submarines to Great Britain and 1 cruiser and 27 frigates the United States; these ships had been on loan since 1944; t the U.S.S.R. was compensated by the acquisition of 1 bat- ship, 1 cruiser, 6 destroyers, 2 submarines and other warships m Italy under the peace treaty, 6 destroyers and other war- ps from surrendered Japanese tonnage and a considerable mber of former German ships, including the incomplete air- ft carrier "Graf Zeppelin." Total available strength in 1949 s 3 battleships, 14 cruisers, 2 coast defense ships, 60 destroy- , 24 escort vessels, 360 submarines and numerous mine layers, ne sweepers, patrol vessels, torpedo boats and auxiliaries.

France.—Because of straitened finances, the battleship "Jean rt" was still not completed; the aircraft carrier "Clemenceau" s not proceeded with; and the cruiser "De Grasse" was not sumed. The fleet comprised 2 battleships, 1 light fleet carrier, escort carrier, 11 cruisers, 1 coast defense battleship, 20 fleet stroyers, 16 escort vessels and frigates, 12 submarines and merous patrol vessels and other warships. Personnel num- red 50,000.

Italy.—The fleet was reduced to the 2 battleships, 4 cruisers, leet destroyers, 16 escort destroyers, 20 corvettes and a num- r of mine sweepers and auxiliaries that were allowed under e peace treaty.

Other European Countries.—Turkey acquired 4 destroyers om the United States, and now had 1 old battle cruiser, 12 et destroyers, 10 submarines, and smaller warships. Person- l: 4,800.

The Netherlands had a well balanced fleet of 1 light fleet rcraft carrier, 2 cruisers, 7 destroyers, 3 escort vessels, 8 sub- rines and a number of other warships and auxiliaries, among em a sloop converted into a radar training ship and a former rman whaler adapted as a submarine detection ship. Person- l: 27,700.

Sweden had 4 cruisers, 5 coast defense ships, 13 fleet destroy- , 8 escort vessels, including 2 older destroyers being con- rted into antisubmarine vessels, 24 submarines, 2 mine layers d numerous other warships, including a hospital ship con- rted into a radar training ship. Personnel: 13,500.

Spain possessed 6 cruisers, 13 fleet destroyers, 15 escort ves- s, 6 submarines, 6 mine layers and 7 fleet mine sweepers, o many minor warships and auxiliaries. Personnel: 22,300.

Greece had 1 cruiser, 2 destroyers, 8 escort destroyers, 6 sub- rines, 8 corvettes and numerous smaller craft. Personnel: ,000.

Norway had 6 destroyers, 7 escort destroyers, 5 submarines, orvettes, 2 fleet mine sweepers and sundry minor warships.

Portugal acquired 3 submarines and 2 frigates from Great itain and completed the reconstruction and modernization of 5 fleet destroyers. At the end of 1949 there were 5 destroy- , 8 sloops and frigates, 6 submarines and various ancillary ssels.

Poland had 2 destroyers, 4 submarines, and smaller craft.

Denmark possessed 10 torpedo boats or small escort destroy- , 2 frigates, 3 submarines, 1 corvette and minor vessels.

THE BATTERED CRUISER H.M.S. "London," one of four British ships damaged by Communist gunfire on the Yangtze river in April 1949. The vessel is shown docked at Shanghai, as stretcher-bearers removed a wounded crew member

Rumania had 2 destroyers, 1 submarine, 2 mine layers and minor craft.

Yugoslavia had 3 escort destroyers and 7 submarines.

Belgium possessed 2 sloops and 1 frigate, with minor craft.

Finland had only minor craft, but its navy was to be built up to the 10,000 tons aggregate allowed under the treaty of Paris.

Bulgaria had a few coastal craft.

South and Central America.—Argentina had 2 old battleships, 3 cruisers, 1 coast defense ship, 11 destroyers, 4 escort destroyers, 4 frigates, 3 submarines, 1 corvette, 2 patrol vessels and a considerable number of mine sweepers and other craft.

Brazil had 1 battleship, 7 fleet destroyers, 8 escort destroyers and 4 submarines, also 6 trawler type corvettes and smaller craft.

Chile possessed 1 battleship, 2 coast defense ships, 6 destroyers, 3 frigates, 7 submarines, 3 corvettes and various other vessels.

Peru had 2 obsolete cruisers, 1 old destroyer, 3 frigates and 4 submarines.

The Dominican Republic had greatly strengthened its navy by the acquisition of 2 destroyers from Great Britain and 3 frigates from the United States. It also had a former frigate presidential yacht, 5 corvettes and a number of patrol vessels and coastal craft.

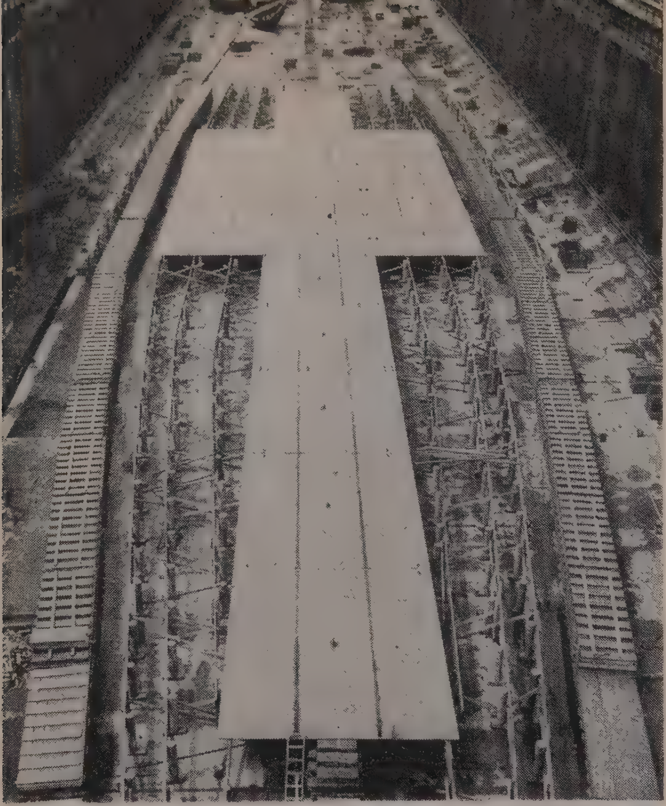
Colombia had 2 destroyers, 1 frigate and several smaller craft.

In the Mexican navy were 4 sloops, 4 frigates, 5 submarine-chaser type patrol vessels, and minor craft.

Venezuela possessed 6 corvettes, 2 gunboats and a few small craft.

Cuba had 2 sloops, 3 frigates, 2 patrol vessels and a number of minor war vessels.

Asia.—China's navy was very divided. The cruiser "Chungking," formerly H.M.S. "Aurora," and the sloop "Chang Shih" (formerly the Japanese "Uji") were lost in the civil war in March and September, respectively, and the escort destroyer "Lin Fu," formerly H.M.S. "Mendip," was returned to the



KEEL of the projected supercarrier "United States," which was designed to accommodate long-range bombers that could carry atomic bombs. Construction of the 65,000-ton warship was halted in April 1949 by order of Defense Secretary Louis Johnson

royal navy in May. The fleet comprised 4 destroyers, 10 vessels of the escort destroyer and sloop type and numerous corvettes, mine sweepers, gunboats, patrol vessels and coastal craft.

Thailand (Siam) possessed 4 small coast defense ships, 4 submarines, 2 sloops, 2 corvettes, 1 old destroyer, 1 fleet mine sweeper, 10 torpedo boats and a number of other small warships.

Iran acquired a frigate and a fleet mine sweeper from Great Britain.

Modern Types of Warships.—The principal types of warships in the world's navies were as follows:

Battleships.—U.S. "Iowa," 45,000 tons; nine 16-in., twenty 5-in. guns; 33 knots; 200,000 S.H.P. U.S. "South Dakota," 35,000 tons; nine 16-in., twenty 5-in. guns; 30 knots; 130,000 S.H.P. British "Vanguard," 42,500 tons; eight 15-in., sixteen 5.25-in. guns; 28 knots; 130,000 S.H.P. British "King George V," 35,000 tons; ten 14-in., sixteen 5.24-in. guns; 27 knots; 110,000 S.H.P. French "Richelieu," 38,500 tons; eight 15-in. nine 6-in. guns; 30 knots; 150,000 S.H.P.

Battle Cruisers.—U.S. "Alaska," 27,500 tons; nine 12-in., twelve 5-in. guns; 33 knots; 150,000 S.H.P.

Aircraft Carriers.—U.S. "Midway," 45,000 tons; eighteen 5-in. guns; 137 aircraft; 33 knots; 200,000 S.H.P. U.S. "Essex," 27,100 tons; twelve 5-in. guns; 82 aircraft; 33 knots; 150,000 S.H.P. U.S. "Saipan," 14,500 tons; light guns; 48 aircraft; 33 knots; 120,000 S.H.P. U.S. "Independence," 11,000 tons; light guns; 45 aircraft; 33 knots; 100,000 S.H.P. British "Implacable," 23,000 tons; sixteen 4.5-in. guns; more than 60 aircraft; 32 knots; 148,000 S.H.P. British "Glory," 13,190 tons; light guns; 40 aircraft; 25 knots; 40,000 S.H.P.

Cruisers.—U.S. "Des Moines," 17,000 tons; nine 8-in., twelve 5-in. guns; 32 knots; 130,000 S.H.P. U.S. "Oregon City," 13,700 tons; nine 8-in, twelve 5-in. guns; 33 knots; 120,000 S.H.P. U.S. "Worcester," 14,700 tons; twelve 6-in., twelve 3-in. guns; 32 knots; 120,000 S.H.P. U.S. "Fargo," 10,000 tons; twelve 6-in., twelve 5-in. guns; 33 knots; 100,000 S.H.P. U.S. "San Diego," 6,000 tons; twelve 5-in. guns; 33 knots; 75,000 S.H.P. British "Superb," 8,000 tons; nine 6-in., ten 4-in. guns; 31.5 knots; 72,500 S.H.P. British "Dido," 5,450 tons; eight 5.25-in. guns; 32 knots; 62,000 S.H.P. Swedish "Tre Kronor," 7,400 tons; seven 6-in. guns; 33 knots; 100,000 S.H.P.

Destroyers.—U.S. "Gearing," 2,400 tons; six 5-in. guns; 35 knots; 60,000 S.H.P. U.S. "Sumner," 2,200 tons; six 5-in. guns; 36 knots; 60,000 S.H.P. British "Battleaxe," 1,980 tons; four 4-in. guns; 31 knots; 40,000 S.H.P. British "Jutland," 2,400 tons; five 4.5-in. guns; 31 knots; 50,000 S.H.P. French "Hoche" (formerly German), 2,660 tons; four 6-in. guns; 36.5 knots; 70,000 S.H.P. Swedish "Öland," 1,880 tons; four 4.7-in. guns; 35 knots; 44,000 S.H.P.

Submarines.—U.S. "Balao," 1,526 tons; two 5-in. guns; ten 21-in. torpedo tubes; surface speed 21 knots; 6,500 B.H.P. British "Amphion," one 4-in. gun; 1,120 tons; ten 21-in. torpedo tubes; 18 knots; 4,300 B.H.P. U.S.S.R. (former German type), 1,600 tons; light guns; 6 torpedo tubes; 15 knots; 4,800 B.H.P. (*See* also MUNITIONS OF WAR.)

FILMS OF 1949.—*Kamikaze* (World in Color Productions).

(R. V. B. B.)

Navy, U.S. Department of: *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

Nazis: *see* WAR CRIMES.

N.E.A.: *see* NATIONAL EDUCATION ASSOCIATION.

Nebraska.

One of the states formed from the territory of the Louisiana Purchase, Nebraska, popularly known as the "Cornhusker State," lies in the lower Missouri valley in the west north central part of the U.S. It was admitted to the union in 1867. Land area 76,653 sq.mi.; water area 584 sq.mi.; pop. (1940) 1,315,834; estimated 1,285,000 by the bureau of the census on July 1, 1949; capital, Lincoln (81,984), estimated 100,000 (1949); largest city, Omaha (223,844), estimated 274,000 (1949). In 1940, 39% of the population was urban. About 1% of the total population is Negro and about 7% foreign-born, principally German and Scandinavian.

History.—State officers for the 1949–51 period included: governor, Val Peterson (Rep.); lieutenant governor, Charles J. Warner (Rep.); attorney general, James H. Anderson (Rep.); auditor, Ray C. Johnson (Rep.); secretary of state, Frank Marsh (Rep.); treasurer, Edward Gillette (Rep.); state superintendent of public instruction, Wayne O. Reed (nonpartisan); chief justice, Robert G. Simmons (nonpartisan).

During the 1949 session of the legislature 318 laws were passed. The more important included: codification of the school laws, repeal of the community-property law, increase in the gasoline tax from five to six cents per gallon, removal of the tax ceiling for the county property levy, increase in maximum benefits for old-age assistance and aid to the blind, authorization for teachers colleges to grant degrees in liberal arts and a change in the organization of the Nebraska legislative council to include all members of the legislature, 43 in number.

The legislative council was directed to study and report to the 1951 session of the legislature on the following: reorganization of the state government, laws relating to children, reorganization of the county government, unfair employment practices, desirability of selling school lands, desirable changes in the state constitution and budgetary practices of the state government.

Education.—Elementary and secondary education is generally directed by local school districts, of which there were nearly 6,865 in 1949, with some supervision from the state superintendent of public instruction and with slightly more than $1,000,000 annual state aid. The total enrolment in elementary and secondary schools in 1948 was 225,536 and the teaching staffs numbered 11,858. Expenditures for 1947–48 were $35,699,444 with an additional $1,222,012 for capital outlay. Higher education is directed by the state university at Lincoln, the college of medicine at Omaha and four state colleges.

Social Insurance and Assistance, Public Welfare and Related Programs.—The state appropriation for public assistance for the 1949–51 period was $35,482,400 of which $19,622,600 were federal funds. In Oct. 1949 the number of persons receiving general relief was 1,460, and each received a monthly average of $31.65. At the same time 8,233 dependent children received an average of $35.64 monthly aid; 605 blind persons received a monthly average of $52.64; 23,835 persons received a monthly average of $43.52 for old-age assistance. The state maintained five correctional and penal institutions with a population of 1,295 as of July 1, 1949, and 12 other institutions for children, mentally ill, the handicapped, and other dependents, with a population of 6,929. These institutions were under the supervision of a board of control to which the state appropriated $18,861,910 for 1949–51.

Communications.—The total highway mileage of the state in 1949 was 100,631. Of this, 1,261 mi. were pavement, 23,258 mi. gravel and 2,73 mi. oiled. The state maintained 8,815 mi. of the total mileage. State appropriations for highway purposes for 1949–51 were $31,940,000 plus an estimated $17,322,000 in federal funds. In 1949 there were 265 airports in the state. Of these 62 were municipally owned, 32 commercial private, 5 state, 3 CAA and 163 personal use. Total railway mileage in 1949 was 5,872. Nineteen radio stations operated, eight of which were located in Omaha and Lincoln.

Banking and Finance.—State banks numbered 283 in 1949 with total assets of $379,227,765. There were 43 building and loan associations with assets of $95,059,829. There were also 130 credit unions and credit associations with resources of $13,144,366. The assets of seven trust companies amounted to $18,233,190. National banks numbered 126 with resources of $897,381,000. State government receipts for the fiscal year ending June 30, 1949, were $58,190,387 and expenditures amounted to $56,241,866. Total appropriations for 1949–51 were $125,782,635, including unexpended balances and $38,618,316 federal aid. The state had no bonded debt, although the debt of local subdivisions was $36,591,849 as of June 30, 1948.

Leading Agricultural Products of Nebraska

Crop	1949	1948	Average 1938-47
rn, bu.	239,330,000	252,468,000	180,307,000
inter wheat, bu.	53,316,000	81,938,000	57,806,000
ring wheat, bu.	1,092,000	1,050,000	1,188,000
ats, bu.	49,720,000	72,744,000	53,767,000
rley, bu.	5,833,000	9,204,000	21,398,000
e, bu.	1,606,000	2,250,000	4,107,000
tatoes, bu.	8,840,000	10,335,000	10,329,000
gar beets, tons.	559,000	496,000	801,000
falfa hay, tons.	2,290,000	2,213,000	1,460,000
ild hay, tons	2,255,000	1,793,000	1,988,000

Agriculture.—The total acreage harvested in 1949 for the crops listed the table was 18,095,000. The total farm income exclusive of any deral payments was estimated to be $920,892,000 as compared with 1,025,747,000 for 1948.

Manufacturing.—Most manufacturing establishments in Nebraska were ngaged in the processing of farm products. However, it was estimated at 45,054 persons were employed in manufacturing of all types with annual payroll of $123,448,000. More than 90% of these were coved by unemployment-compensation laws.

Mineral Production.—Aside from clay, sand, gravel and building stone, ost of which is consumed locally, the state has no mineral wealth of onsequence. There are minor deposits of petroleum which produced estimated 300,000 bbl. during 1949. (A. C. Be.)

lecrology: *see* OBITUARIES.

legroes, American. Significant gains as well as setbacks combined to intensify the issues of .S. civil rights on many fronts during 1949. Brought into harp political focus by the civil rights planks in the Demoratic election platform, remedial national legislation along hese lines was blocked in the 81st congress by a coalition of outhern Democrats and conservative Republicans, despite Pres. arry S. Truman's insistent recommendations. The test issues f fair employment, antipoll tax and antidiscrimination clauses federal education and welfare aid legislation remained as ritical issues for the succeeding session. Meanwhile, initiated y a presidential order, a committee on equality in the armed ervices effected total integration of separate Negro units in the ir forces, considerable integration in the navy and in the army, avy and air force training programs, but met considerable esistance and only slightly altered policies in the army itself. presidentially authorized statement of the Federal Housing dministration in December promised the withholding of fedral aid in housing construction wherever any discrimination, eligious or racial, was practised. The scope of this ruling was et to be determined: potentially, it was of crucial reformaory importance.

The year's events thus irrevocably joined these issues on the olitical front, and more importantly produced a ground swell f antibias discussion and planning, with some direct action, in ducational, industrial and church circles.

Legal and Political Developments.—Rep. William L. Dawon (Ill.) became chairman of the house committee on expendiures, and later vice-chairman of the Democratic national comittee. Considerable improvement was made in the employent and upgrading of Negroes in the federal bureaus, and in ivil service and United States employment service practices. Villiam H. Hastie, former governor of the Virgin Islands, was ppointed a judge in the U.S. circuit court of appeals (3rd istrict). Ralph Bunche was offered a post as an asst. sec. of tate, but declined primarily as a protest against segregation in he national capital.

The U.S. supreme court accepted for direct ruling a case nvolving discrimination in public services on southern railoads, several of which were reported as already relaxing some f their former Jim Crow practices. Oregon passed a fair emloyment act, joining the five other states with similar legisation, New York, New Jersey, Connecticut, Massachusetts nd Washington. New Jersey also passed an antidiscrimination aw for hotels, restaurants, theatres, resort and recreational facilities. State fair employment practice commissions from New York, New Jersey and Connecticut reported encouraging gains in reducing job discrimination. The annual conventions of the Congress of Industrial Organizations, the American Federation of Labor and the United Automobile Workers widened their endorsements of nondiscrimination in labour union practices, and the National Urban league at its annual convention formulated a plan for co-ordinated federal, state and municipal collaboration in antijob discrimination on a realistic "increase the consumer capacity" basis.

Educational and Cultural.—The *Crisis* annual survey reported a known but not total college enrolment of 62,938 Negro students; many mixed schools were unable to report for lack of separate statistics. Similarly reported were 7,944 bachelor graduations, 410 master's and 16 Ph.D. degrees. Roman Catholic higher institutions admitted more Negro students. Harvard university appointed its first Negro professor, William A. Hinton, in its medical school. Yale senior societies selected their first Negro member, and the National Interfraternity conference adopted, after sharp controversy, a resolution recommending elimination of restrictive membership provisions in college Greek letter societies. The National Students' association elected a Negro president, as did the Columbia college freshmen. The American Medical association extended its inclusion of Negro physicians and elected Peter Murray of New York city to its house of delegates. The U.S. Naval academy, Annapolis, Md., graduated its first Negro.

The supreme court ruling on equal educational facilities provoked a plan for separate but standardized regional postgraduate and professional schools co-operatively maintained by the southern states. Though endorsed by some Negro educators, this regional plan was opposed by the liberal forces in education, white and Negro. Though it failed of endorsement for federal aid and sanction in congress, it was scheduled to come up again for consideration. Countermoves were strong, however, in pending suits for admission to the regular state institutions in practically all of the 16 states involved. Some of these, like the University of Arkansas medical school, Fayetteville, the University of Missouri, Columbia, and the University of Kentucky, Lexington, conceded the principle by admitting a few Negro students.

Ralph Bunche, director of the division of trusteeship of the United Nations, as acting mediator in Palestine carried through successfully armistice negotiations with all of the nations involved and so attained international influence and acclaim. On his return, he received official commendation from President Truman and the U.N. and a number of public tributes and citations including nine honorary degrees. Ulysses Kay, outstanding young Negro composer, after a series of contest awards, received a National academy fellowship. Todd Duncan and a mixed cast triumphed in *Lost in the Stars*, a Maxwell Anderson-Kurt Weill dramatization of Alan Paton's novel, *Cry, the Beloved Country*. William Grant Still's Haitian opera, *Troubled Island*, was successfully produced by the New York City Opera company. The celebrated Gilpin Players organization of Cleveland, O., opened their new Karamu theatre. Noteworthy advances were made in the film portrayal of the more serious aspects of Negro life and the race problem in such films as *Pinky*, *Home of the Brave*, *Lost Boundaries*, *Intruder in the Dust* (after William Faulkner's novel) and the prizewinning documentary, *The Quiet One*. (*See* also CIVIL LIBERTIES; EDUCATION; LAW.)

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Willard Savoy, *Alien Land* (1949); William Faulkner, *Intruder in the Dust* (1948). (A. LeR. L.)

Nehru, Jawaharlal (1889–), Indian prime minister, was born at Allahabad, Nov. 14. He was one of the leaders of the Indian independence movement and on Aug. 15, 1947, became the first prime minister of the dominion of India. (For his early career see *Encyclopædia Britannica.*)

In April 1949 he attended the commonwealth conference at which a solution was found whereby India could become a republic and at the same time remain within the commonwealth. On April 28 he visited Dublin, Republic of Ireland, where he was received on the floor of the *dail eireann* (house of representatives), and then went to Switzerland where at Berne on May 5 he ratified the Indo-Swiss treaty of friendship which had been signed in New Delhi in Aug. 1948. Addressing the Delhi provincial political conference on June 19 he announced that it had tentatively been decided that India should be declared a republic on Jan. 26, 1950. He broadcasted on June 29 on India's food situation and urged the nation to co-operate in a "mighty drive for food production." After outbreaks of violence in Calcutta, he paid a three-day visit to West Bengal in July. The dispute with Pakistan over Kashmir reached a climax in September; and Nehru again claimed that Kashmir was part of India. (*See* India, Dominion of; Pakistan, Dominion of.) In October he went to the United States and Canada at the invitation of the two governments and also visited London. He returned to Bombay on Nov. 14. On May 23 at Dak Pathar he laid the foundation stone of the first river-valley project in the United Provinces, known as the Yamuna hydroelectric scheme.

Nepal. An independent kingdom in the Himalayas, Nepal lies between India and Tibet. Area: *c.* 54,000 sq.mi. Pop. (1948 est.): *c.* 6,910,000. The aboriginal stock is Mongolian with an important admixture of Hindu blood. Religion: Buddhism mixed with Hinduism. Capital: Kathmandu (pop., *c.* 110,000). The ruling family are Hindu Rajputs. All power is in the hands of the prime minister, to whom it was permanently delegated by the king in 1867. Ruler: Maharajadhiraja Tribhubana Bir Bikram Jung Bahadur; prime minister: General Sir Mohan Shumshere Jung Bahadur.

History.—Constitutional reforms of a minor character had been introduced but in 1949 power was still wielded by a hereditary prime minister. The policy of isolation was little changed. There was still no modern industry and no railway link with the outside world. Schemes of development were however under consideration. A movement for popular reform in the state was receiving support from the Indian Congress party and an appeal was made by Nepalese agitators to Pandit Nehru, the Indian prime minister, imploring him to intervene. Some sympathy was given to it by the Nepalese domiciled in India, estimated at 2,000,000. (W. Bn.)

Foreign Trade.—(1944–45) Imports: 32,520,000 Nepalese rupees; exports 37,376,000 Nepalese rupees.

Transport and Communications.—Roads (1949): 237 mi. suitable for motor vehicles. Licensed motor vehicles (Dec. 1948): cars 227, commercial motor vehicles 88.

Finance and Banking.—Estimated gross revenue 12,500,000 Nepal rupees. Monetary unit: Nepalese rupee with an exchange rate (Dec. 1949) of 21 cents U.S.

Nervous System. Studies in nervous and mental diseases in 1949 were fruitful regarding Parkinsonian syndromes and convulsive diseases. Two synthetic drugs, artane and tridione, were intensively used on patients.

Artane (tri-hexyphenidyl), an antispasmodic, was used primarily in the treatment of all forms of Parkinsonian-like diseases—conditions caused by an infection of the brain (encephalitis) or disturbances of the blood vessels of the brain (vascular). The drug was found to stop or reduce the tremor found in most all cases of Parkinsonian syndromes. Other symptoms, rigidity and weakness were only relieved occasionally. Fortunately toxic effects were not often produced by this new drug.

Tridione (tri-methyloxazolidine-dione) was used in 1949 in the treatment of petit mal epilepsy (a momentary lapse of consciousness). Treatment of this condition previously had been disappointing, but tridione was found to arrest or stop the petit mal attacks. Its use, however, was found to cause harmful or toxic effects on the white corpuscles of the patient's blood. The white blood cells were reduced in number at first and then altered so that an increase in the lymphocytes and a decrease in the polymorphonuclear leucocytes resulted. Tridione produced glare phenomenon, decreased day vision, macropsia, drowsiness, epigastric distress, headache, skin rashes, and swellings of the eyelids, lips and many other regions. When such symptoms developed, the drug was eliminated and in all the cases the symptoms vanished. If the drug was not stopped early agranulocytosis (diminished white blood cells) might develop and cause death. Three deaths were reported. Although the toxic reactions were found in only a small number of cases tridione was highly recommended.

Cortisone (Compound E) was another new substance that was found to have definite value in the care of nervous and mental diseases. The drug could improve the mental capacity of the patient as well as give him a sense of well-being. Such help was often needed by patients who were afflicted with a debilitating disease. The drug was also found to be exceedingly helpful in myasthenia gravis when given with neostigmine. (*See* also Psychosomatic Medicine.)

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Netherlands. A kingdom of northwest Europe, the Netherlands is bounded on the north and west by the North sea, on the east by Germany and on the south by Belgium. Area: 12,868 sq.mi. (not including the waterways and sheets of water larger than 185 ac. and minor acquisitions along the German frontier). Pop. (July 1, 1949, est.): 9,955,394. Language: Dutch. Religion (May 1947): Roman Catholic 38.50%, Dutch Reformed 31.03%, Reformed Churches 7.93%, non-church members 17.04%. Chief towns (pop., July 1, 1949, est.): Amsterdam (cap., 832,583); Rotterdam (671,901); The Hague (555,339); Utrecht (191,811); Haarlem (161,380); Eindhoven (139,320). Ruler: Queen Juliana; prime minister: Willem Drees.

History.—At the beginning of the year 1949 the country was the object of world attention and criticism because of the government's decision to resume military operations in Indonesia on Dec. 18, 1948, and the Indonesian question remained in the forefront throughout the year. It led, following the resolution of the United Nations Security council of Jan. 28, 1949, to the resignation on Feb. 11 of E. M. J. A. Sassen, minister of overseas territories, and later, after the government's acceptance of the Van Royen-Roem statements of May 7, which provided, *inter alia,* for the return of the republican government to its seat at Djokjakarta, to the resignation of the first high commissioner of the crown in Indonesia, L. J. M. Beel, and his replacement, on June 2, by A. H. J. Lovink. From Aug. 23 to Nov. 2 The Hague was the scene of the round table conference

AISING THE NETHERLANDS FLAG in the town of Tuddern, part of an area
 former west German territory awarded to the Netherlands by an Allied
greement reached in Paris, France, March 26, 1949

etween Dutch and Indonesian representatives, with observers f the U.N. Commission for Indonesia in attendance. At this onference agreement was reached on the charter transferring overeignty to the new republic of the United States of Indoesia, on the statute of union between the kingdom of the Jetherlands and the new republic and on a number of technical egulations arising out of the transfer. The ceremonial transfer f sovereignty took place in the Burgherzall of the royal palace t Amsterdam on Dec. 27. (*See* also Indonesia, Republic of he United States of.)

The year saw further important developments in the counry's postwar participation in European and world affairs. It vas a signatory of the North Atlantic treaty (*q.v.*), concluded t Washington, D.C. on April 4 and approved by the first and econd chambers on July 19 and Aug. 3, respectively. On May 5 he country was likewise a signatory of the statute of the Counil of Europe and took part in the first meeting of the new ouncil's assembly at Strasbourg, Fr., during August and Sepember and in the meeting of the Council of Foreign Ministers n Paris in November. As a member of the Brussels treaty, it ent delegates and experts to the various western European nion conferences held during the year, while, in the summer, nits of the armed forces participated in the five powers' comined fleet and air manoeuvres. That these commitments, howver, imposed heavy burdens on a country still struggling to reover from World War II was shown in the budget estimates or 1950, which provided no less than 1,901,000,000 guilders, nore than half the estimated total expenditure, for military urposes, repair of war damage and national debt payments. *See* also European Union.)

The maximum expectation of aid under the European Recovry program for 1949–50 was $258,100,000. In November an dditional $37,500,000 was granted for Indonesia up to Dec. 31, after the ban on this aid was lifted following the successful conclusion of the round table conference. On July 13, it was agreed with the U.S. that 240,000,000 guilders should be made available from the special E.R.P. local currency account to finance four important building and drainage schemes, and, in the same month, a U.S. loan of $15,000,000 was arranged through the International bank for the purchase of vital industrial equipment abroad.

Despite the serious technical difficulties involved, the immediate Benelux goal of full economic union between the Netherlands, Belgium and Luxembourg was neared during the year. At the conference in March at The Hague, July 1, 1950, was fixed as the date on which this union would become a reality; and, at Luxembourg, in October, agreement was reached on the last preparatory steps to be taken. The "pre-union," originally planned for July 1, whereby restrictions on the exchange of certain goods between the three countries were removed, came into operation on Oct. 17. Discussions were also begun between experts from the Benelux countries and France and Italy concerning an integration of all five national economies.

As a result of U.S. aid, Benelux and the nation's own efforts, visible progress was made during the year toward economic recovery. On Sept. 20 the minister of finance presented for 1950 what was, with the exception of the capital expenditure section, the first balanced budget since World War II. On the same day he announced a 30.5% devaluation of the guilder in terms of the dollar, as a consequence of a similar devaluation of the British pound. The rationing of all consumers' goods, apart from coffee and fuel, ceased on Nov. 3.

Yet, despite these improvements, the government warned that great effort and sacrifice and a larger measure of industrialization were required if the country was to solve the difficulties ahead, difficulties accentuated by growing competition on the export market and the rapid increase of the home population.

On April 23, 20 minor adjustments were made to the eastern frontier, whereby the Netherlands acquired about 27 sq.mi. of territory, inhabited by 9,404 Germans. The adjustments—agreed upon by the six western union powers on March 26, 1949—were of an interim character pending the peace treaty with Germany and were designed to remove anomalies in communications and to facilitate customs control.

Local government elections were held in June. The results reflected the slight shift to the right observed in the general elections of the previous year and again mainly at the expense of the Communist party. (*See* also Netherlands Antilles; Surinam.) (J. T. Br.)

Education.—(1947) Elementary schools 7,936, pupils 1,293,000, teachers 39,050; secondary schools 446, pupils 100,960, teachers 6,121; technical schools 797, pupils 194,837, teachers 8,567; training colleges 88, students 6,552, teachers 1,006; agricultural schools (1946) 192, pupils 42,851; universities and institutions of higher education 10, students 25,036, professors and lecturers 769.

Finance and Banking.—(Guilders) budget: (1949 est.) revenue 4,004,000,000, expenditure 4,299,000,000; (1950 est.) revenue 3,520,000,000, expenditure 3,500,000,000. National debt (Jan. 1948) 21,586,000,000. Currency circulation (Aug. 1949) 3,073,000,000. Gold reserve (Sept. 1949) $162,000,000 U.S. Bank deposits (Aug. 1949) 4,199,000,000. Monetary unit: florin or guilder with an exchange rate (Nov. 1949) of 1 guilder = 26.32 cents U.S.

Foreign Trade.—(Guilders) imports: (1948) 4,966,000,000, (1949, six months) 2,669,000,000; exports: (1948) 2,718,000,000, (1949, six months) 1,708,000,000.

Transport and Communications.—Roads (1949): 9,320 mi.; Licensed motor vehicles (Dec. 1948): cars 103,000, commercial motor vehicles 87,500. Railways (1948): 2,083 mi. Shipping (Jan. 1949): number of merchant vessels 965, total gross tonnage 2,558,566. Telephones (1947) 575,995.

Agriculture and Fisheries.—Main crops (1948, in metric tons): wheat 305,000; barley 138,000; oats 316,000; rye 382,000; potatoes 5,870,000; sugar, raw value, 281,000; dry peas 32,000; flax fibre 18,300; linseed 15,000; rapeseed 27,000. Livestock (May 1948): cattle 2,313,000; sheep 425,000; pigs 871,000; horses 334,000; hens 17,405,000. Fisheries: total catch (1948): weight 257,870 metric tons; value 89,746,000 guilders. Production (1948, in metric tons): milk 4,488,000; butter

70,956; cheese 96,828; sugar 455,880; meat 168,000; whale oil 17,507.

Industry.—Industrial establishments (Oct. 1948): 9,230; persons employed 773,527. Fuel and power (1948): coal 11,033,000 metric tons.; manufactured gas delivered 49,723,000 cu.ft.; electricity 4,132,000,000 kw.hr.; crude oil 495,000 metric tons. Raw materials (1948, in metric tons): pig iron 441,000; iron castings 132,000; steel castings 8,000; steel ingots 200,000; salt 250,000. Manufactured goods (1948, in metric tons): tobacco cut 8,300; cigarettes 5,317,600,000; paper 288,000; cotton yarn 47,800; woollen yarn 26,000; rayon yarn 16,000; rayon fibre 9,800; cement 588,000; building bricks 972,000,000.

FILMS OF 1949.—*Life in Lowlands; Stories of Holland: Background for Reading* (Coronet Instructional Films).

Netherlands Antilles.

The Netherlands Antilles consist of six islands in the West Indies, with a total area of 403 sq.mi. and a total pop. (est. 1949) of 160,000, of which about one quarter are aliens. Three islands lie near western Venezuela, Curaçao (210 sq.mi.), Bonaire (95 sq.mi.) and Aruba (69 sq.mi.). The other three islands, sparsely populated, lie 500 mi. to the northeast—the southern portion of St. Martin (17 sq.mi.), St. Eustatius (7 sq.mi.) and Saba (5 sq.mi.). The largest city and capital is Willemstad, on the island of Curaçao (pop. 45,000). The official language is Dutch, but a local patois of diverse origin is equally widespread. During 1949, L. A. H. Peters continued to serve as governor.

History.—The first election in the colony since the grant of universal suffrage in 1948, occurred on March 17, 1949. The National People's party gained four of the eight seats of the island of Curaçao in the colonial legislature (*staten*), and the three representatives of the eastern islands; and these seven, with the five representatives of the Aruban People's party, set up a coalition. On April 19, the legislature was officially installed, and the head of the National People's party, M. F. da Costa Gomez, became prime minister. Ill feeling between the Aruba and Curaçao wings of the coalition soon forced the reorganization of the cabinet. After eight weeks of wrangling, in late July, there was set up a compromise cabinet, consisting in part of technicians not identified with any party, and presided over by L. C. Kwartsz. This cabinet weathered the rest of the year.

There was a decline in employment during the second half of 1949. The Shell oil refinery near Willemstad continued to operate virtually at maximum capacity throughout the year, but the Creole refinery on Aruba suffered a slack period early in 1949 because of slower operations in Venezuela. Late in the year, the pipe line to the new Creole refinery in Venezuela was opened, absorbing some of the technicians from Aruba. Gainful employment was otherwise confined to commerce, which because of Willemstad's role as a free port, had long been substantial in the capital.

An unusually severe and protracted drought affected Curaçao through the first half of 1949. An ambitious program of expanding the facilities for increasing the water supply was authorized to be undertaken immediately, in the hope of its completion in two or three years. (C. ME.)

Education.—In 1949 there were 47 elementary schools with 15,462 pupils, 25 higher elementary schools with 9,592 pupils and 1 secondary school with 133 pupils. In 1948, 6,953,234 guilders were expended on education.

Finance.—The monetary unit is the Netherlands Antilles guilder or florin, valued at $0.530264, U.S. currency, official rate, on Dec. 15, 1949. The budget for the fiscal year 1949 estimated revenue at 57,329,511 *f* and expenditure at 57,267,582 *f*. Actual revenue in 1948 was 55,788,497 *f*. The public debt on Dec. 1, 1949, was 4,884,000 *f*. Notes in circulation on Dec. 1, 1949, amounted to 37,000,000 *f*; the gold reserve was 35,000,000 *f*.

Trade and Communications.—Exports in 1948 totalled 766,000,000 *f*.; imports were 867,000,000 *f*. About 97% of the exports consisted of petroleum products and 77% of the imports consisted of crude petroleum, almost all of which is brought from Venezuela by shallow-draft tender. Total imports of crude petroleum in 1948 amounted to 245,000,000 bbl. The U.S. supplied about two-thirds of the non-petroleum imports.

The highway mileage of the islands of the Netherlands Antilles in 1949 was as follows: Curaçao, 200; Aruba, 150; Bonaire, 32.5; St. Martin, 17; Saba, 4.5 and St. Eustatius, 2.5. There were no railroads. Air service was furnished by K.L.M. and Pan American World Airways. About 5,540 motor vehicles were in use on Curaçao in 1949. Telephones (1949) totalled 2,469, of which 1,927 were on Curaçao.

Agriculture.—Farming was limited for the most part to subsistence crops, and much food had to be imported because of the scarcity of water and lack of irrigation facilities. Sorghum, beans, corn and aloes were grown; only the latter was commercially important.

Manufactures.—Petroleum refining was by far the most important industry. There were three refineries—Curacaosche Petroleum Industrie Maatschappij, N.V., at Emmastad on Curaçao and Lago Oil and Transport Co. (Standard Oil Co. of N.J.) and the Eagle Oil Co. on Aruba. Production of refined petroleum products in 1948 by the first two, which account for more than 95% of the production, amounted to 234,000,000 bbl., of which 40,000,000 bbl. consisted of gasoline, 145,000,000 of fuel oil and 49,000,000 of other petroleum products. A secondary industry was the transshipment of cargo bound to Venezuela from large vessels to lighter vessels which could pass over the bar at the entrance to Lake Maracaibo.

Mineral Production.—Activity was limited to the exploitation of salt and phosphate of lime deposits.

Netherlands Indies: *see* NETHERLANDS OVERSEAS TERRITORIES.

Netherlands Overseas Territories.

Under this heading are grouped the overseas territories whose names were formally changed on Sept. 20, 1948, to "Indonesia," "Surinam" and the "Netherlands Antilles," respectively. Certain essential information on the component parts of the Netherlands overseas territories is given in the table.

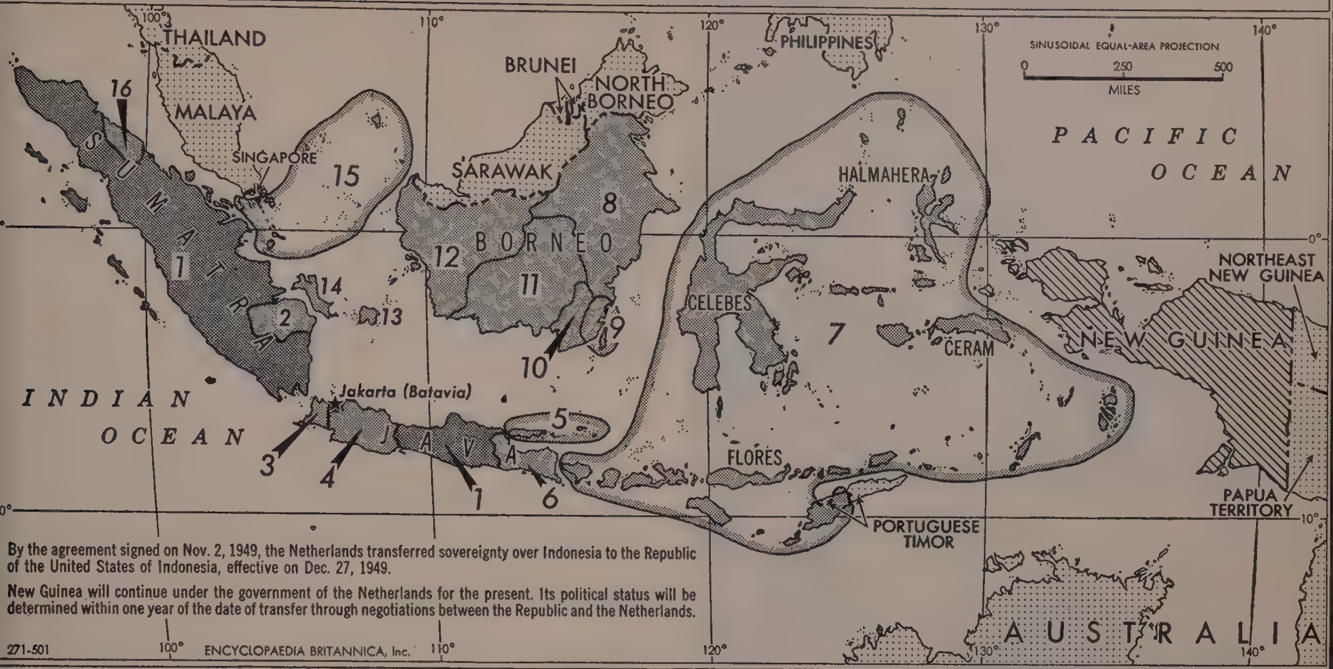
Indonesia.—The archipelago called Indonesia and comprising the territory of the former Netherlands Indies, stretches 3,000 mi. from east to west and 1,300 mi. from north to south, between 6° N. and 11° S. and from 95° to 141° E. It includes the islands of Sumatra, Java, the Celebes and Borneo (whose northern part is under British rule) and many smaller islands, together with the western half of New Guinea. Total area: *c.* 735,000 sq.mi.; total pop. (1948 est.) 76,360,000, all but 2.6% of them being indigenous (Java 40,000,000, Sumatra 8,000,000, Celebes 4,000,000, Dutch Borneo 2,500,000). Chief towns (pop., 1930 census): Batavia (cap., 435,184); (mid-1949 est., 1,200,000); Soerabaja (341,675); Semarang (217,796); Bandoeng (166,815); Soerakarta (or Solo) (165,484); Djokjakarta (139,649). Languages: Malay is to a certain extent a language of intercommunication between different population groups speaking 25 main languages and 250 dialects; Dutch is also spoken by educated Indonesians. Religions: Moslem *c.* 90%, Christian 3.4%, Hindu 1.4%. High commissioners of the crown in 1949: Louis J. M. Beels, (after June 2) Anthony H. J. Lovink and (after Dec. 27) H. M. Hirschfeld.

History.—The second police action of the Netherlands military forces intended to curb the Indonesian republic achieved its aims in the course of a few days; hostilities ceased in Java on Jan. 1, 1949, and in Sumatra on Jan. 5, 1949. Deprived of its remaining territory, which was almost entirely occupied by the Dutch, of its various armed formations which were scattered and of its leaders who had been removed elsewhere, the Indonesian republic virtually ceased to exist. And with it disappeared the uncompromising spirit in which the republicans competed with the federalists for the inheritance of power in the archipelago.

In Jan. 1949, however, the government of India summoned a conference of Asiatic countries to New Delhi, where the Dutch action in Indonesia was sharply condemned and a resolution was passed calling for the restoration of the *status ante quo* in Indonesia. The U.S. representative on the United Nations Security council sponsored a resolution, passed on Jan. 28, enjoining the Netherlands to withdraw its troops from former republican areas in Java and Sumatra, to release the captured leaders and to restore the government of the republic at Djokjakarta.

Faced with this grave development on the one hand and its responsibilities as the recognized sovereign power in Indonesia

THE REPUBLIC OF THE UNITED STATES OF INDONESIA



By the agreement signed on Nov. 2, 1949, the Netherlands transferred sovereignty over Indonesia to the Republic of the United States of Indonesia, effective on Dec. 27, 1949.

New Guinea will continue under the government of the Netherlands for the present. Its political status will be determined within one year of the date of transfer through negotiations between the Republic and the Netherlands.

271-501 ENCYCLOPAEDIA BRITANNICA, Inc.

- ★ FEDERAL DISTRICT
- 1 REPUBLIC OF INDONESIA
- 2 STATE OF SOUTH SUMATRA
- 3 BANTAM, UNDER PROV. FED. GOV'T.
- 4 STATE OF PASUNDAN (WEST JAVA)
- 5 STATE OF MADOERA
- 6 STATE OF EAST JAVA
- 7 STATE OF EAST INDONESIA
- 8 AUTONOMOUS AREA OF EAST BORNEO
- 9 AUTONOMOUS AREA OF S.E. BORNEO
- 10 AUTONOMOUS AREA OF BANJAR
- 11 STATE OF GREAT DAYAK
- 12 AUTONOMOUS AREA OF WEST BORNEO
- 13 STATE OF BILLITON
- 14 STATE OF BANGKA
- 15 STATE OF RIOUW
- 16 STATE OF EAST SUMATRA

the other, the Netherlands government chose to make it ear that it had to reject this intervention. The consequence of is attitude soon assumed alarming aspects, since in reply to e Netherlands' refusal to yield to the Security council's in- nctions, sanctions and suspension of aid under the European ecovery program were foreshadowed. To break the deadlock, anada's representative in the Security council made some con- ructive suggestions in March, which proved to be acceptable the Dutch and which were finally embodied in the council's ling of March 23. The ruling combined the operative part of e Security council's Jan. 28 resolution with the recommenda- ons that the republic, if it were to be restored, should in ture undertake to co-operate toward an effective cessation of ostilities in Indonesia and should, furthermore, be prepared to ke part, together with the Netherlands and the federalists, a round table conference at The Hague, which was to provide r a peaceful and lasting settlement of the Indonesian problem. he Dutch forthwith concurred with the Canadian ruling, and om then on developments moved with noticeable rapidity. On ay 7 the leaders of the Dutch and republican delegations, nego- ating on the newly recommended basis of compromise, an- ounced that agreement in principle had been reached. On June a meeting of the heads of the delegations was brought about garding a method to effectuate the cessation of hostilities t took effect on Aug. 10 in Java and on Aug. 14 in Sumatra). hereupon the evacuation of Djokjakarta and surrounding dis- icts by the Netherlands troops took place on June 24, and on ly 6 the reconstructed republican government was allowed to turn to its former capital.

Meanwhile, the governments the Indonesian federal states, hich welcomed the new policy compromise and which had ntributed their influence to ing it about, took steps to safeguard their own positions. An inter-Indonesian conference was held, bringing together federalists and republicans for the purpose of exploring the possibilities of a common policy to guide their respective delegations at the forthcoming round table conference. The inter-Indonesian conference ended in Batavia, Java, on Aug. 2 on a note of complete harmony, which covered among other things recognition of the federal structure of Indonesia as a basic conception of the new constitutional system.

The round table conference opened in The Hague on Aug. 23 in a favourable atmosphere which prevailed to the end, notwithstanding occasional clashes. Some part of this success might be attributed to the U.N. Commission for Indonesia, which attended throughout the conference and toward the end arbitrated in several delicate cases. On Nov. 2 the round table conference ended with a solemn plenary session in the mediaeval Hall of the Knights, at The Hague, where the completion of its business was announced and the documents were signed by the three delegations, Netherlands, republican and federalist, certifying agreement on the following main subjects:

1. The charter of transfer by the kingdom of the Netherlands of sovereignty over Indonesia to the republic of the Federated States of Indonesia, to be effected not later than Dec. 30, 1949. (It was also agreed that the Netherlands kingdom should retain sovereignty over the Dutch part of New Guinea (area: 152,089 sq.mi.) for the time being, a further decision on which would have to be negotiated within one year.)

2. The statute of the union to be concluded between the Netherlands and Indonesia. The union, under the queen of the Netherlands, would have to assure the co-operation of the partners in the field of their common interests through ministerial conferences twice yearly. Attached to this statute was a joint declaration on fundamental human rights and liberties, followed by a series of agreements, some of them in detail, on the principal subjects of future co-operation—foreign relations, defense, financial and economic matters (rights, concessions and enterprises; financial and monetary conditions; commercial policy; public indebtedness

Netherlands Overseas Territories

	Area (in sq.mi.)	Population		Capital	Status	Governors
Indonesia	c. 735,000	(1948 est.)	76,360,000	Jakarta (Batavia)	federation of states	High Commissioner H. M. Hirschfeld
Surinam (Dutch Guiana) . .	54,291	(1948 est.)	209,700	Paramaribo	colony	Governor, J. Klaasesz
Netherlands Antilles . . .	403	(1949 est.)	160,000	Willemstad	colony	Governor, L. A. H. Peters

DUTCH TROOPS leaving Batavia, Java, in May 1949, aboard ship bound for the Netherlands. A cease-fire order, the third in three years, was signed by Dutch and Indonesian officials Aug. 1, with both sides agreeing to hold to their current lines without further moves to attack

of the former Netherlands Indies and cultural interests).

3. An agreement on the transition period, covering a great many problems arising out of the change from the old to the new constitutional order (citizenship and nationality; position and rights of civil servants; military questions, such as the withdrawal of Netherlands naval, land and air forces and the setting up of a Netherlands military mission to assist the new government of Indonesia to build up sea, land and air forces of its own).

All the above-mentioned agreements and various protocols accompanying them required ratification by the Netherlands parliament and by the representative bodies of the federal states and the republic of Indonesia respectively.

The Netherlands government was the first to initiate proceedings of ratification. The first reaction of parliament was not directly favourable, the lack of precision and the absence of guarantees for the fulfilment of the agreements being among their main objections. Simultaneously with the end of the round table conference, security conditions in several parts of Java showed a marked deterioration, and the question as to how law and order were to be maintained after the withdrawal of the Dutch troops did not fail to give rise to anxiety. It was to be foreseen, however, that both the Netherlands parliament and the Indonesian representative bodies on the other hand would realize that a rejection of the results of the round table conference would create an impossible and untenable situation and that under the circumstances trust in the good faith of all parties concerned in carrying out the agreement according to the spirit rather than to the letter might be justified by future events.

While the round-table conference was still in progress, the Republican and Federalist delegations in The Hague reached complete agreement on a preliminary constitution for the Republic of the United States of Indonesia, based on the principles of federalism and parliamentary democracy, which would remain in effect until a constituent assembly, scheduled to convene within one year's time, should pass a final text. On the basis of this constitution, the Indonesians made preparations for the transfer of sovereignty. Achmed Soekarno was elected on Dec. 16, at Djokjakarta, by representatives of the Indonesian states to be the president of the republic and the first all-Indonesian cabinet was formed with Mohammed Hatta as prime minister.

The round-table conference agreements were ratified by both houses of parliament in the Netherlands and by the representative assemblies of the Indonesian states in the course of the first few weeks of December. On Dec. 27 the solemn transfer of sovereignty by the queen of the Netherlands to an Indonesian delegation headed by Premier Hatta took place at Amsterdam, the capital of the Netherlands, while simultaneously in Batavia (renamed Jakarta) the high commissioner of the crown, last representative of Netherlands constitutional authority in Indonesia, handed over the reins of government to president Soekarno. The rule of the Netherlands kingdom in Indonesia had come to an end. (*See* also Indonesia, Republic of the United States of; Netherlands; Netherlands Antilles; Surinam; United Nations.) (W. G. P.; X.)

Neutrons: *see* Physics.

Nevada. A state of the mountain group of western states, Nevada was the 36th state to be admitted to the union on Oct. 31, 1864; it is popularly called the "Sagebrush state." Land area 110,540 sq.mi.: water area 738 sq.mi. Pop. (1940 census): 110,247. The estimated population on July 1, 1949, was 174,000, according to the U.S. census bureau. The principal cities with 1940 pop. and 1949 pop. in parentheses were: Carson City, the capital, 2,478 (3,700); Reno, 21,317 (37,000); Las Vegas 8,422 (31,000); Sparks 5,318 (8,800); Ely 4,140 (5,200); Elko 4,094 (6,000).

History.—The 1949 legislature which met on Jan. 17 for the regular 60-day session was faced with the problem of providing funds for the state's pressing needs. The members stood off a determined effort for the passage of a sales tax. Increases were made in liquor and cigarette levies and new taxes were levied on marriage-licence fees and court action fees. From the expenditures of the first six months of the new biennium it appeared possible that no serious problem might arise with receipts and expenditures both showing substantial increases.

During the fiscal year ending June 30, 1948, the proceeds of the 2% gambling tax netted the state $1,102,047.17. For the nine-month period ending Sept. 30, 1949, the total collected was $908,398.31.

On Jan. 1, 1950, state officers were: governor, Vail M. Pittman; lieutenant governor, Clifford Jones; secretary of state, John Koontz; controller, J. P. Donovan; treasurer, Dan W. Franks; superintendent of public instruction, Mildred Bray; attorney general, Alan H. Bible.

Education.—On Jan. 1, 1950, Nevada had 179 elementary schools with a total enrolment of 20,019; teachers numbered 835; high schools totalled 35 with enrolment of 6,323, staffed by 328 teachers. Kindergarten enrolment was 2,047 in 15 kindergartens with 36 teachers. School population was 28,389. Average salaries paid to high school teachers was $3,319 and to elementary school teachers $2,888.

The 1949 legislature passed legislation making it possible for public school teachers to join the state employees' retirement system.

Social Insurance and Assistance, Public Welfare and Related Programs.—The amount spent for social security was $2,160,373.22 for the fiscal year ending June 30, 1949. Aid to the deaf, dumb and blind expense was $13,987.86. Nevada spent $2,069,506.62 for unemployment security benefits during the fiscal year ending June 30, 1949. On Jan. 1, 1950, the state prison had 298 men and 2 women inmates; total expenditures for the fiscal year ending June 30, 1949, were $208,300.86. The state industrial home, on Jan. 1, 1950, had 50 boys and 3 girls under school control; total expenditures for the fiscal year ending June 30, 1949, were $29,691.62. The state hospital for mental diseases had 339 inmates on Jan. 1, 1950; expenditures for the 1949 fiscal year were $269,055.89. The orphans' home had 52 boy and 43 girl inmates on Jan. 1, 1950, and the cost to the state for the 1949 fiscal year was $88,083.27.

Table I.—*Leading Agricultural Products of Nevada*

Crop	1949 est.	1948	Average 1938–47
rley, bu.	972,000	1,036,000	680,000
atoes, bu.	342,000	360,000	515,000
eat, bu.	738,000	709,000	473,000
y, tons	688,000	649,000	597,000
ts, bu.	360,000	369,000	291,000
rn, bu.	90,000	81,000	87,000

Communications.—During 1949, 70.45 mi. of oil-asphaltic highway and .50 mi. of gravel-surfaced roads were constructed; 66.12 mi. of road x were constructed and 18.93 mi. of gravel-surfaced roads were built. penditures for the fiscal year ending June 30, 1949, were $5,083,021.36. ring the last half of the year 1949 lower contract bids were being omitted by contractors with active competition resulting in moderately ver road-construction costs.

Railroad mileage in Nevada on Jan. 1, 1950, totalled 1,701 mi. of ndard gauge and main track and 2,193.36 mi. of all track including lings.

As of Jan. 1, 1950, there were 418 registered aircraft and 67 estab-hed airports. Development projects at 12 locations in Nevada were ogramed for the fiscal year 1950 which would involve construction sts of $325,000.

Banking and Finance.—On Jan. 1, 1950, there were 8 main office banks th 19 branches, a total of 27 banking units serving Nevada; the total sources of these banks on Nov. 1, 1949, were $177,922,826.66; de-sits were $166,509,384.29. Total resources were the highest in Nevada's story, reflecting both increased population and improved conditions. ring 1949 no banks were in liquidation and none were closed.

Of state funds on July 1, 1949, cash on hand was $5,277,618.08. tal cash received, including the cash balance on July 1, 1948, of ,318,782.08 was $25,569,058.14. Cash disbursements during the fiscal ar were $20,291,440.06. The state debt on Jan. 1, 1950, was $715,000. e postwar reserve fund had a balance of $1,080,000 in U.S. bonds and 5,718.61 in cash. Actual cash balance in the state treasury on Jan. 1, 50, was $4,264,132.95.

Agriculture.—The 1949 agricultural production was slightly less than 1948. Total cash receipts from crops marketed in Nevada were 5,078,000 in 1948. Cash received in 1949 from marketing of livestock s estimated at $39,449,000.

Table II.—*Mineral Production in Nevada*

	1946	1947	1948
ld	$ 3,173,800	$ 3,117,205	$ 4,047,400
ver	1,010,526	1,246,709	1,671,626
pper	15,751,584	20,833,260	19,552,320
d	1,564,150	2,062,368	3,318,000
c	5,526,356	4,106,740	5,660,480
	$27,026,416	$31,366,282	$34,249,826

Mineral Production.—According to preliminary figures, the value of cop-r, zinc, gold, lead and silver produced in Nevada during 1949 was $29,-9,731, or about 13% less than the value of the 1948 production. Of the tal in 1949, copper contributed 49% of the value, zinc 18%, gold 15%, d 12% and silver 6%. (E. C. D. M.)

ew Brunswick.

Second largest of the four maritime provinces of Canada, New Brunswick entered e confederation in 1867. Area: 27,985 sq.mi. Pop.: (1941) 7,401; (1949 est.) 516,000.

History.—The first session of the 41st legislature prorogued ril 28, 1949, having put 112 new laws on the statute books. ee treatment of tuberculosis was expanded to cover all pes and incidence, and mass X-ray services were expanded bstantially. The Labour Relations act went into force on July for industries coming within provincial jurisdiction, and pro-bited unfair practices, established a procedure for certification labour unions, made collective bargaining compulsory and ovided for appointment of conciliation officers and boards if rgaining failed. Faced with unemployment benefits running to 0,000 per week by November in the Saint John area alone, ans were formed for 11 large-scale public works to relieve any rsening of the situation.

In Jan. 1949 the McNair Liberal government announced its 48 fiscal year had closed with a surplus of $2,032,418, making e ninth consecutive annual surplus with a total of $15,556,-2, which had been used for debt retirement and for capital ojects. Although motor-vehicle fees, the gasoline tax, the to-cco tax and stumpage had shown increases, liquor revenues l off by more than $250,000.

Education.—It was announced that beginning the 1951–52 school year grade-12 course would be introduced, giving a minimum of 12 years of e education to New Brunswick youth. Provincially controlled schools d in 1946 (latest data available in 1949): total enrolment 95,227; erage daily attendance 79,476; teachers 2,776; total revenue $4,823,855.

Agriculture.—During 1948 the 67,000 ac. sown to potatoes produced 17,315,000 bu. Cash income from the sale of farm products for the first half of 1949 was $19,420,000 compared with $21,100,000 for the same 1948 period.

Fisheries.—During the year sardine canners objected strenuously to plans to harness the tides of Passamaquoddy for power, claiming dams would cut the Bay of Fundy sardines off from their chief food, the algae of Quoddy bay. In 1948 New Brunswick fishermen landed a total of 224,200,000 lb. of fish valued at $7,689,128 ($2,000,000 more than in 1947) and having an all-time-high market value of $21,000,000.

Forestry.—During 1949 there was some recession in total forest revenue, resulting from a lower pulpwood cut and loss of some of the United Kingdom lumber market. During 1948 the province's 14,000,000 ac. of forest returned $124,000,000 of products (compared with $24,000,000 in 1938), of which $72,000,000 was from pulp and paper operations and $23,000,000 from sawmill and woodworking industries.

Production.—Industrial development during 1949 was slowed down through power shortages. To overcome this the electric power commission planned new steam plants and a three-way feed provincial grid to cost $10,000,000. A plant to use anhydrite shales from the Petitcodiac river for making sulphuric acid and superphosphate fertilizer was a major 1949 industrial development.

Minerals.—Mining held its fourth place in primary production during 1949, but at an estimated better total value than in 1948, which, at $7,100,333, was a record $2,000,000 over 1947. Development of Stoney creek oil fields continued and production of gypsum increased. (*See* also CANADA, DOMINION OF).

FILMS OF 1949.—*Saint John Valley* (National Film Board of Canada).
(C. CY.)

New Caledonia: *see* FRENCH UNION.

Newfoundland and Labrador.

A province of Canada. Area: Newfoundland 42,734 sq.mi.; Labrador *c.* 110,000 sq.mi. Population: Newfoundland (1945 census) 315,643, (1947 est.) 321,897; Labrador (1947 est.) 5,639. Capital: St. John's (pop. 1947, 57,849). Lieutenant governor: Sir Leonard Outerbridge.

History.—From the suspension in 1934 of the dominion status, established under the statute of Westminster in 1931, Newfoundland, until March 31, 1949, was administered by a commission of government under the chairmanship of the governor and consisting of six commissioners, three of whom were Newfoundlanders, the other three being from the United Kingdom. The commission of government was responsible to the government of the United Kingdom.

A national convention, elected in 1946, to consider the future form of government, ended their deliberations in Jan. 1948. They recommended to the government of the United Kingdom that two forms of government; viz., the continuation of commission of government, and the restoration of responsible government, should be submitted to the people of Newfoundland in a national referendum. The United Kingdom government did not accept this recommendation. Instead, it decided to place three options on the ballot paper in the national referendum. These were as follows: (1) commission of government for a period of five years; (2) confederation with Canada; (3) responsible government as it existed in 1933.

A referendum, held on June 3, 1948, resulted as follows: 23,311 votes for (1); 64,066 votes for (2); 69,400 votes for (3). As no one choice obtained an absolute majority over the other two combined, it was necessary, under the provisions of the Referendum act, to hold a second referendum.

A second referendum was held on July 22, to decide between (2) and (3). The result was 78,323 for (2) and 71,336 for (3), a majority of 6,989 for confederation with Canada.

On Dec. 2, at Ottawa, the terms of union were signed by representatives of the Canadian government and by a Newfoundland delegation. The terms were subsequently approved by the parliament of Canada and the Newfoundland commission of government. Confederation was duly consummated on March 31, 1949. Newfoundland became the tenth province of Canada and was entitled to be represented at Ottawa by seven members of the house of commons and six members of the senate.

As a result of the first provincial election (May 1949), a

Liberal government came into power under the premiership of J. R. Smallwood, the chief architect of confederation.

Education.—(1948) Schools, 1,200; pupils, 72,940; teachers, 2,400.

Transport and Communications.—Roads, main and secondary, 6,170 mi.; motor vehicles (licensed), 8,528 cars, 4,550 trucks, 184 motorcycles. Railways, 750 mi. Gander airport, Newfoundland, and Goose Bay airport, Labrador, were important stages between Europe and America for air lines of several countries on both sides of the Atlantic.

Finance and Banking.—Budget (1948–49, in Canadian dollars): revenue $41,087,503, expenditure $39,920,447; (1949–50 est.) revenue $20,182,550, ordinary expenditure $22,984,600, capital expenditure $5,759,700. Accumulated surplus $40,250,000 as of March 31, 1949. Provincial debt $7,393,335. Savings and bank deposits (Dec. 31, 1948): $95,715,976, plus government deposits of $13,072,212. Exchange rate: Canadian dollar=90 cents U.S.

Agriculture.—Area under cultivation, 87,000 ac., mainly hay, potatoes, turnips and cabbages for home use. Livestock (1950): horses, 14,500; cattle, 22,700; sheep 84,000; pigs, 11,600; goats, 11,500; poultry, 343,000.

Industry.—Fishing industries employed 28,000 persons; paper and pulp mills 11,318; sawmills 6,400; mining 4,000; farming 10,000.

FILMS OF 1949.—*Inside Newfoundland* (National Film Board of Canada).

(A. M. F.)

New Guinea: *see* NETHERLANDS OVERSEAS TERRITORIES; TRUST TERRITORIES.

New Hampshire. One of the New England states of the United States and one of the original group of 13, New Hampshire is popularly known as the "Granite state." Area: 9,304 sq.mi., including 280 sq.mi. of inland water. Population (1940) was 491,524, of which 57.6% was urban and 42.4% rural. Estimated population, July 1, 1949, excluding armed forces overseas, was 544,000, an increase of 10.7% since 1940. In 1940 there were 490,989 whites, including 422,693 native and 68,296 foreign born. Capital: Concord, with estimated population (1943) of 27,495. Other cities: Manchester, 78,436; Nashua, 33,914; Portsmouth, 20,530; Berlin, 16,480; and Dover, 16,393, as of 1943.

History.—The 131st general court was in session from Jan. 5 to July 27, 1949, this being the second longest session in the history of the assembly. State revenues being insufficient to meet a proposed budget of more than $35,000,000 it became necessary to consider ways and means of providing additional income. Bills providing for a sales tax, an income tax, legalized dog racing and a state lottery were introduced but failed of passage. With the state government facing a deficit of around $6,000,000, drastic budget cuts for various departments became necessary. The state was also forced to abandon its program of general aid to local school districts, which resulted in an increased tax burden on localities for the maintenance of schools. The legislative session ended with the problems arising out of increasing expense and inadequate revenue basically unsolved, and with the state compelled to operate under a so-called "austerity budget."

A commission was created to investigate "subversive activities" in New Hampshire and a bill was also passed requiring that a loyalty oath be taken by teachers. The highly controversial Willey labour law enacted in 1947 was repealed on the ground that in certain of its aspects it was in conflict with the federal Taft-Hartley law.

State officers in 1949 were: governor, Sherman Adams; secretary of state, Enoch D. Fuller; state treasurer, F. Gordon Kimball; commissary general and adjutant general, Charles F. Bowen; attorney general, Ernest R. d'Amours, succeeded in March by William L. Phinney; commissioner of education, Hilton C. Buley; commissioner of agriculture, Perley I. Fitts. U.S. senators were H. Styles Bridges and Charles W. Tobey, both Republicans.

Education.—In 1948–49 there were 53,402 students enrolled in the public elementary schools of the state, with 1,943 teachers. There were 18,406 students enrolled in secondary schools with 1,027 teachers. Total payments covering expenditures of school districts for 1948–49 amounted to $15,680,935.25. In 1947–48, Catholic parochial elementary schools had a total registration of 18,783, while other private elementary schools had a registration of 672. The total number of students enrolled in approved public academies, accredited secondary schools and other private secondary schools in 1947–48 was 6,357.

Other state educational institutions were the University of New Hampshire, at Durham; Keene Teachers college, at Keene; and Plymouth Teachers college, at Plymouth.

Social Insurance and Assistance, Public Welfare and Related Programs.—As of Oct. 1949, recipients of old-age assistance numbered 7,181 for the month, with expenditures of $351,504. There were 1,480 families, representing 3,693 children, involved in the program of aid to dependent children, with expenditures of $142,202. There were 319 cases of needy blind receiving aid to the amount of $17,297. In spite of an increase in the direct relief caseload from 3,114 in September to 3,225 in October, expenditures decreased from $133,798 in the former month to $127,426 in the latter. During the calendar year 1948 the net income of the state unemployment compensation fund was $4,375,088 while benefit payments amounted to $3,557,594, as compared with $2,645,786 in 1947. Servicemen's readjustment allowances in 1948 amounted to $2,081,381. The unemployment compensation fund at the beginning of 1949 amounted to $27,846,933.

The net appropriation by the legislature for the operation of the state prison at Concord for the fiscal year ending June 30, 1950, was $241,330; and for the Industrial School for Committed Minors at Manchester $179,440.

Communications.—At the end of 1945 there were 12,491 mi. of rural roads in New Hampshire, including highways under state, local and federal control. Disbursements from state highway funds for the fiscal year ending June 30, 1948, amounted to $10,887,000. During 1949 the construction of the seacoast toll road extending from Maine to Massachusetts was continued. In 1946 there were 951 mi. of steam railways owned in the state. At the close of the same year there were 32,210 business and 93,529 residential telephones in operation.

Banking and Finance.—As of June 30, 1949, there were in New Hampshire 51 national banks with deposits of $168,099,000 and resources of $188,714,000, as compared with 51 banks with deposits and resources, respectively, on June 30, 1948, of $174,645,000 and $194,540,000. Fifty-eight state-chartered banks had deposits of $356,009,406 and resources of $402,973,571 as compared with 57 institutions reporting deposits and resources, respectively, of $355,929,925 and $399,607,430 on June 30, 1948. There were 25 state-chartered building and loan associations with resources of $23,887,294, as compared with $22,265,918 for the previous year. State-chartered savings banks and savings departments of trust companies reported deposits of $340,825,819 as of June 30, 1949, an amount $112,846 less than the total for June 30, 1948. This was the first year since 1942 that savings deposits had shown a decline. The Laconia Federal Savings and Loan association reported assets of $1,934,159 and savings share accounts of $1,426,305 on June 30, 1949, while the Manchester Federal Savings and Loan association reported assets of $18,047,810 and members' share accounts of $15,229,360 as of June 30. Savings institutions held $188,641,351 in U.S. government securities on June 30, 1949, a decline of $11,356,415 since July 1, 1948.

Cash receipts of the state treasury department for the fiscal year ending June 30, 1949, were $62,050,270.32; cash disbursements $64,346,566.24. Cash balance, June 30, 1949, was $3,422,728.19; cash balance, July 1, 1948, was $5,719,024.11. Gross fixed bond and note debt, June 30, 1949, $10,500,000; net bonded debt $8,311,842.59.

Agriculture.—In 1945 there were 18,786 farms in New Hampshire with a total acreage of 2,017,049 and of an average size of 107.4 ac. Estimated acreage from which crops were harvested or hay cut, or which was planted in orchards, amounted to 435,602, dropping to 383,000 by 1949. The total value of farm lands and buildings in 1945 was approximately $80,394,869. Cash receipts from farm marketings in 1948 amounted to $69,234,000, an increase of 7.2% over receipts for 1947. Cash receipts from major items in 1948 were as follows: poultry $28,671,000; dairy products $18,912,000; forest products $5,957,000; miscellaneous crops $5,417,000; meat animals $5,327,000; and fruit $2,012,000.

Leading Agricultural Products of New Hampshire

Crop	1949	1948	Average 1938–47
Corn, bu.	528,000	407,000	562,000
Oats, bu.	185,000	240,000	249,000
Hay, tons	391,000	445,000	424,000
Potatoes, bu.	968,000	968,000	1,120,000
Apples, bu. (commercial)	1,056,000	612,000	721,000
Maple syrup, gal.	41,000	39,000	55,000
Maple sugar, lb.	11,000	10,000	23,000

Lumber production in 1947 amounted to 417,993,000 bd.ft., including 53,636,000 ft. of hardwood and 364,357,000 ft. of softwood.

Manufacturing.—There were 1,124 manufacturing establishments in New Hampshire in 1947, employing an average for the year of 74,752 persons. The value added by manufacture was $306,932,000, as compared with $104,453,000 for 1939. Total of salaries and wages paid in connection with manufactures was $177,479,000 in 1947. It was estimated that in 1947 and 1948, 167 new industries manufacturing 49 different products were established in the state.

Mineral Production.—Principal mineral resources were feldspar, mica, building stone (chiefly granite), brick clays, and sand and gravel. Value of mineral products in 1946 was $1,451,000.

(W. E. Ss.)

New Hebrides: *see* FRENCH UNION; PACIFIC ISLANDS, BRITISH.

w Jersey. New Jersey was the third state to enter the union. It is situated on the middle Atlantic st between New York city and Philadelphia, Pa. Its 1940 oulation of 4,160,165 ranked it ninth among the states. The y 1, 1949, federal census estimated its population at 4,873,-. New Jersey covers 7,836 sq.mi., including 314 sq.mi. of ter. Capital: Trenton (1940, 124,697). The two largest cities Newark (429,760) and Jersey City (301,173).

History.—The outstanding event during 1949 was the re-ction of Alfred E. Driscoll (Rep.), as governor. Under the nstitution of 1844, a governor could not succeed himself after ving served his term of three years. Under the new constitu-n (1947) a governor may serve for two successive terms of r years each. Governor Driscoll was to begin his second term . 17, 1950.

)f the 767 bills considered by the regular session of the 173rd islature, Jan. 11 to April 8, 1949, 293 became law. In addi-n, a special session, May 31 to June 15, enacted 15 laws.

The 1948 session of the legislature had faced the tremendous k of implementing the newly adopted constitution of 1947. e 1949 session took its cue from the program recommended Governor Driscoll. It implemented his housing program, horized a $25,000,000 bond issue (approved at the November ction) for state institutional construction; established a 200 minimum annual salary for teachers; adopted legisla-n providing for a $105,000,000 veterans' bonus referendum ot approved by the voters); extended the existing laws against crimination in employment to prevent and eliminate discrim-tory practices in places of public accommodation; and ex-ded the Workmen's Compensation act coverage to all occu-ional diseases contracted as a result of exposure hazards in course of employment.

The 1949 legislature sought to round out the work begun by previous session in implementing the provisions of the new stitution by passing a series of acts conforming certain ctices and procedures to the new set-up.

ducation.—Pupil enrolment (1949): elementary 464,196; junior high 264; high 144,784; special schools 6,636. Day school teachers: 139. One-room schools numbered 129. Colleges numbered 9, junior eges 11, universities 4, total full-time students 30,533; state teachers eges 6, enrolment 4,360; professional and technological schools 10, olment 7,827.

ocial Insurance and Assistance, Public Welfare and Related Programs.— average monthly grant for aid to dependent children for the year ing June 30, 1949, was $84.54 per family, an increase over the pre-us year of $4.47. The related program covering guardianship of chil-n averaged $49.75 a month per capita cost in the same period.

The average monthly grant for old-age assistance to 23,653 recipients ing the month of June was $47.80. The gross expenditure for assist-e and burial cost during the fiscal year amounted to $12,754,799, resenting an increase over the previous fiscal year of $934,081.

The average monthly grant for assistance to the blind was $53.16 as June 30, 1949. The New Jersey law requires the registration of all d people. The state commission for the blind had on its register, as June 30, 1949, a total of 5,517 clients.

anking and Finance.—Deposits in the 149 banks and savings banks lled $2,691,578,000 on June 30, 1949, a decrease of $29,172,000 from e 30, 1948, the outcome of the absorption during the period of two e banks by national banks. Government deposits decreased $8,-,000 during the period. Of 126 commercial banks, 73 with 74.7% otal deposits were members of the federal reserve system. Govern-

Leading Agricultural Products of New Jersey

	1949	1948	Average, 1938–47
, bu.	8,145,000	9,650,000	7,412,000
at, bu.	1,992,000	1,763,000	1,313,000
short tons	430,000	436,000	414,000
e potatoes, bu.	8,554,000	13,629,000	10,793,000
t potatoes, bu.	2,400,000	2,550,000	2,068,000
berries, bbl. (100 lb.)	63,000	69,000	76,800
ragus fresh, crt., doz. bunches	2,932,000	2,044,000	1,937,000
n peppers, bu.	1,620,000	1,913,000	1,713,000
atoes for fresh market, bu.	1,575,000	1,785,000	1,862,000
ens, Jan. 1, number, about	11,000,000	10,692,000	8,188,000
production, eggs	1,500,000,000	1,487,000	943,000,000
production, lb.	1,100,000,000	1,073,000,000	1,008,000,000

N V. KENNY, elected mayor of Jersey City, N.J., on a fusion ticket calling an end to "boss rule." Kenny took office in May 1949, after 32 years of oken political dominance by Frank Hague (Dem.)

ment securities made up 49.9% of the total assets ($2,931,249,000) of all banks compared with 50.5% the year before. The total of banking plants and real estate in the commercial banks showed a ratio of 18.5% of total capital accounts as compared with 18.2% in June 1948. The comparable ratio for the savings banks showed 6.2% of surplus and reserve as against 7.1% a year before.

Agriculture.—In 1949 there were about 27,000 farms in New Jersey with a total of 1,900,000 ac., of which slightly more than 1,000,000 ac. were under cultivation. Dairying and poultry raising were important.

Manufacturing.—The year 1949 saw relatively little labour disturbance; there being no large-scale work stoppages in the manufacturing industry. The trend of New Jersey industry continued slightly downward during the first nine months of the year but then gradually improved, the 10,500 manufacturing establishments providing employment at the end of the year for approximately 655,000 production workers. There was considerable plant construction during the year.

New Mexico.

Fourth largest state in the southwestern United States, popularly known as the "Sunshine state"; admitted to the union in 1912. Area 121,666 sq.mi. (121,511 sq.mi. land, 155 sq.mi. water); pop. (1940) 531,818; rural 355,417; urban 176,401; native white 477,065; Negro 4,672; foreign-born 15,247. On July 1, 1949, the bureau of the census estimated the population of the state at 589,000.

History.—The administration, legislature and congressional representation were Democratic in 1949. The chief officers of the state elected in the 1948 elections were: governor, Thomas J. Mabry; lieutenant governor, Joe M. Montoya; secretary of state, Mrs. M. A. Romero; auditor, E. D. Trujillo; treasurer, H. R. (Ray) Rodgers; attorney general, Joe L. Martinez; superintendent of public instruction, Charles L. Rose; commissioner of public lands, Guy Shepard. The state gasoline tax was raised from 5 cents to 7 cents; "sabotage, force and violence, sedition or treason" was forbidden against the state or federal government; the county of Los Alamos was established; a New Mexico economic development commission, a commission on alcoholism and a state fair employment practices commission were established.

Education.—For the school year 1948–49 the total elementary school enrolment was 118,498; the high school enrolment 25,315; special students 48. Rural teachers (1,515) received an average salary of $2,806; 2,998 municipal teachers $3,091.68.

Social Insurance and Assistance, Public Welfare and Related Programs.—During the calender year 1949, $1,841,213 was paid out for civilian unemployment benefits; for unemployed veterans $1,678,967; and for self-employed veterans $234,815.

On June 30, 1949, $1,017,012 had been spent for old-age and survivors insurance, and $7,264,925 for public assistance.

The penitentiary appropriation was $272,000 for 626 inmates (Sept. 1); insane asylum $800,000, 1,040 inmates (Nov. 15); Los Lunas Mental hospital (the new name for the school for mental defectives) $85,000, 114 inmates; industrial school $102,500, 75 inmates (November); Girls' Welfare home $190,000, 101 inmates (December).

Communications.—New Mexico had an estimated 53,869 mi. of unsurfaced and 9,289 mi. of surfaced roads in 1949. The state highway department expended $14;717,757. Steam railway companies operated 2,495 mi. of main track (1948). There were 108 airports and approximately 832 mi. of airways operated by four scheduled air carriers. There were about 100,873 telephones.

Banking and Finance.—On June 30, 1949, there were 25 national banks with deposits of $210,134,000; loans $73,658,000; investments $88,027,000; and 25 state banks with deposits of $77,856,000; loans $28,051,000; investments $32,411,000. Total resources of 11 building and loan associations in 1948 were $9,308,789 and of 7 federal savings and loan associations $13,320,665.

Table I.—*Leading Agricultural Products of New Mexico*

Crop	1949 (est.)	1948	Average 1938–47
All hay, tons	506,000	499,000	453,000
Grain sorghums, bu.	8,684,000	3,738,000	2,663,000
Winter wheat, bu.	4,572,000	3,231,000	3,580,000
Corn, bu.	2,160,000	1,890,000	2,474,000
Beans, bags	554,000	430,000	604,000
Cotton, bales	255,000	236,000	119,000
Cottonseed, tons	102,000	95,000	48,000
Forage sorghum, tons	109,000	168,000	238,000

Table II.—*Principal Mineral Products of New Mexico*

Mineral	Value, Year ending June 30, 1949	Value, Year ending June 30, 1948
Copper	$27,391,922	$29,875,899
Potash	33,529,132	42,738,880
Coal	7,069,591	6,712,043
Zinc	10,545,320	8,880,821
Lead	3,322,009	2,273,684
Silver	425,735	441,951
Molybdenum	650,483	493,111
Iron-Manganese	266,250	—
Gold	99,711	114,735

The total of all state receipts for the fiscal year ending June 30, 194 was $72,057,768. The total bonded debt was $22,271,000.

Agriculture.—The total value of agricultural production in 1949 was $90,051,000 (est.); acreage harvested 1,830,000 (est.). Livestock was valued at $179,550,000, Jan. 1, 1949.

Manufacturing.—Manufactured products were valued at $55,486,000 in 1947; an average of 7,590 employees received $18,222,000 in wages.

Mineral Production.—Potash was New Mexico's chief mineral in 1949. For the year ending Dec. 31, 1948, 47,604,665 bbl. of oil, valued at $114,251,196, were produced.

FILMS OF 1949.—*Carlsbad Caverns, N.M.*, (National Park Films).

(F. D. R.)

Newspapers and Magazines.

U.S. Newspapers.—The content of U.S. newspapers returned to a normal peacetime character in 1949. Although the continued "cold war" with the U.S.S.R. sustained the amount of foreign news, the space devoted to crime, accident and disaster news approached prewar quantity.

Every listing of "the biggest news stories of 1949"—in terms of newspaper space and headlines—gave first place to Pres. Harry S. Truman's announcement of Sept. 23 that the U.S.S.R. had produced an atomic explosion. Other "biggest news events," as selected by United Press editors, were: (2) Communist victories in China; (3) coal-steel strikes; (4) high naval officers' challenge to unification policies; (5) conviction of 11 top U.S. Communists; (6) death of small girl 95 ft. down a well pipe; (7) air liner crash at Washington, D.C., which killed 55; (8) Hungarian court's conviction of Cardinal Mindszenty; (9) Vice-president Alben W. Barkley's marriage to Missouri widow; and (10) baseball's major league races and closest finish.

The highest costs in history faced U.S. newspapers in 1949. The average hourly wage of mechanics passed the $2 mark for the first time, and a "fourth round" of wage raises was de-

FLEET STREET as it looked to Vicky of the *News Chronicle* (London) after the report of the Royal Commission on the Press was made public in June 1949. Among those caricatured are Lord Beaverbrook of the Express group (second, extreme left), and Lord Kemsley of the Kemsley group (left foreground) anded. Print paper remained at the $100-a-ton price reached uring the war. Publishers estimated profits 5% to 30% below ose of 1948; in four years newspaper costs had risen 82%.

Circulation totals in Jan. 1949 were at the all-time high of ,285,297 daily and 46,308,081 Sunday and appeared to be sing slightly, with afternoon newspapers leading. But copy ices had risen to five cents, with no one-cent and few two-cent ilies on the newsstands. For the sixth year, the number of ily newspapers grew—going above the 1,781 attained in 1948.

Advertising volume levelled off during the year despite the uyer's market." February was the first month in four years show a drop below the same month of the preceding year—own 2.7% from Feb. 1948. Media Records reported a gain of % for the first ten months over 1948, with a peak of 6.5% in ay. This contrasted with a 12.7% gain in advertising in 1948 er 1947 and showed little gain in the $389,261,000 of national lvertising in 1948. More reliance on classified want-ad income as evident.

The biggest labour news was the settlement on Sept. 18 of the -month printers' strike in five Chicago newspapers. After inting with photoengraved typewritten copy since Nov. 24, 947, Chicago dailies returned to "hot type" on Sept. 21, giving eir 1,500 printers $10 a week increase and a new contract hich met the demand of the International Typographical union r something like "closed shop" without violating the Taft-artley labour law—a contract that became a model for other ewspapers.

After months of argument, the National Labor Relations oard on Oct. 29 found I.T.U. guilty of violation of the Taft-artley law in its "closed shop" and "unilateral" bargaining, ut as late as Dec. 17 I.T.U. had taken no steps to comply with e board's order. Meanwhile, at its 91st annual convention in akland, Calif., in August, I.T.U. gave more power to its presi-ent, Woodruff Randolph, and started a drive for employer-pported pensions, but did not renew its 4½% defense assess-ent on its 75,000 members which had expired in March.

The American Newspaper guild reported a slight drop in embership to 23,238, from 24,117 in 1947, and shifted its argaining emphasis from wages to "fringe benefits." Its 16th nual convention at Columbus, O., saw an unsuccessful effort remove Sam Eubanks, vice-president, on charge of com-unistic leanings. The guild withdrew from the International rganization of Journalists in November.

The most notable ownership change was the purchase on July of the *Washington Times-Herald* by Col. R. R. McCormick, ublisher of the *Chicago Tribune* and part owner of the *New ork Daily News*. The newspaper had been bequeathed to seven aff executives by Mrs. Eleanor M. (Cissy) Patterson, who died July 24, 1948. McCormick paid $4,500,000 and put his niece, rs. Maxwell P. (Bazy) Miller, Jr., in charge.

The *New York Star*, successor in 1948 to *PM*, suspended ublication on Jan. 28, ending the adless newspaper venture arted by Ralph Ingersoll in 1940 and later owned by Marshall eld. The *New Orleans Item* was sold on July 14 for $2,000,-oo by Ralph Nicholson to David Stern, Jr. Several cities, in-uding Madison, Wis., Logansport, Ind., and Dayton, O., saw e start of joint operation of two newspapers in one plant.

The standing committee of congressional press gallery wrestled ith two new problems—admission of reporters of labour union ewspapers and of writers for "Voice of America" international oadcasts of the state department. Suggestions in the Hutchins ress Freedom commission report of 1948 led to the holding of *Editor and Publisher* Critical Panel on March 18.

U.S. Magazines.—The magazine industry reported tighter siness trends in 1949. Circulations fluctuated; among the 9 ading general magazines, 5 dropped as much as 10% while 4 gained; among the 99 largest sellers, 55 lost circulation and 44 gained; total newsstand sales were up 9.4%. Total advertising dropped about 2% during the first nine months—down to $300,990,323—and much more during the coal-steel strikes of the fall. Some publishers tried local tie-ups to boost advertising. *Life* cut its advertising rates 3% on April 4.

The greatest sales gains were reported by romance magazines, movie reviews, teen-age, popular science, home architecture and fashions, while standard women's magazines declined. More teen-age magazines were launched for ages 7–14. Cowles Magazines, Inc., attracted attention with *Quick*, a new type of slick news weekly with 68 very small pages. Morris Fishbein retired as editor of the *American Medical Journal;* David A. Smart returned as publisher of *Esquire;* and John Denson became managing editor of *Colliers*. An annual directory listed 7,800 magazines of all types in 1949; the 551 general and farm magazines totalled 9,000,000 circulation, and readers paid $1,400,000 a day for them. (G. M. Hy.)

Canada.—Increased newsprint production with a levelling-off trend in prices plus a steady advertising market brought bigger daily newspapers, but the persisting pressures for higher wages (there had been a 53.2% rise between 1939 and 1948) had four effects: (1) ratio of reading matter to advertising rarely went above 55%; (2) editions were dropped; (3) three-cent papers practically vanished; and (4) ownerships changed. Specifically, 1949 developments included: the *Windsor Star*, the *Saint John Telegraph-Journal*, the *Moncton Transcript* and the *Moncton Times* went from four cents to five cents; the 13-month-old co-operatively-organized *Winnipeg Citizen* and the labour-owned *Glace Bay* (*N.S.*) *Gazette* quit; and the morning edition of the *Ottawa Journal* was abandoned. Main changes in ownership included the sale of the *Ottawa Journal* to staff members who were directors of the company; sale of the *Victoria Times* to a syndicate controlling the *Calgary Albertan* and the *Edmonton Bulletin;* and purchase by Roy H. Thomson of controlling interest in the 185-year-old *Quebec Chronicle-Telegraph* and in the *Moose Jaw Times-Herald*.

The American Newspaper guild broke ground in Canada by organizing in whole or in part such dailies as the *Toronto Star*, the *Toronto Telegram*, the *Ottawa Citizen*, the *Montreal Gazette*, the *Vancouver Sun*, the *Vancouver News-Herald*, the *Victoria Times* and the *Victoria Colonist*. The *Canadian Register* broke away from the 1948 amalgamation with the *Ensign*, national Catholic weekly newspaper. The *London Free Press* celebrated its 100th birthday with a 232-page edition, largest in Canadian daily newspaper history. (C. Cy.)

Great Britain.—There was considerable improvement in the supply of newsprint in 1949, with the result that the British press was at last given wider scope for its enterprise. Unrestricted sales of newspapers were resumed on Jan. 3, when a more generous allocation of newsprint permitted the penny newspapers to increase their size to a daily average of five pages. Nearly four months later further supplies of paper advanced the number of pages to six and so caused the disappearance of the four-page newspaper, which had been established by government regulation in 1941.

The sales of daily newspapers rose from 19,000,000 a day before World War II to 29,000,000, but the consumption of newsprint was much less than in 1938. The equalized price of newsprint at the beginning of 1949 stood at the high price of £42 a ton, and this was reduced by stages to £33 5*s.* in October. Approximately 70% of newsprint during the year was home-produced.

The Royal Commission on the Press, which had been appointed in 1947 under the chairmanship of Sir David Ross and cost more than £20,000, published its report in June. The report

"News Pictures of the Year"

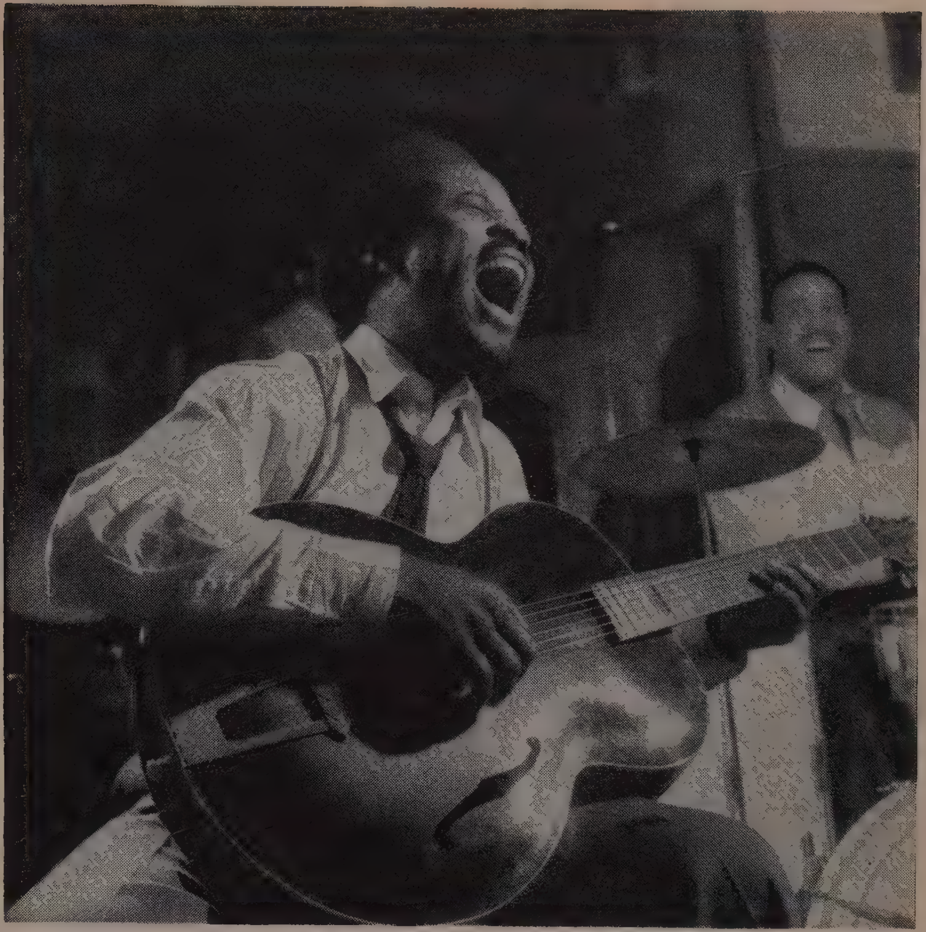
CONTEST WINNERS

Shown on these pages are the prize photographs from the seventh annual "News Pictures of the Year" competition, sponsored jointly by the *Britannica Book of the Year* and the University of Missouri school of journalism. These, and more than 80 other outstanding prints from the competition, were published in book form by Zebra Press, Cincinnati

POSITE PAGE, TOP: Leonard Mc-
nbe of *Life* magazine was chosen
ews Photographer of the Year." His
t, "Ramuda," took first prize in the
TURE category, and was also one of
prints by McCombe chosen as the
t PORTFOLIO of the year

POSITE PAGE, LEFT: "Bull's Eye,"
arded first prize in the SPORTS cate-
y, was taken by John Rammel of the
atur Herald-Review (Ill.)

POSITE PAGE, RIGHT: first prize,
VS, a dramatic shot titled "Death of
hinese," by Warren Lee of Acme
spictures. It shows a public execu-
by municipal police during the dis-
anization that preceded the entrance
ne Communists into Shanghai, China



↑ "Modern Dance," by Joseph McKeown of the London *Illustrated*, represented by two prints from his first-prize SEQUENCE taken at a London
↓ dance hall

Number of Daily Newspapers of the World, 1947-49

[Since some of these figures are mere estimates, and the dates of them vary, the total must be regarded as an estimate for the latter 1940s]

Alaska*	4
Albania♀	2
Algeria§	10
Argentina§	180
Australia†	60
Austria§	33
Azores†	4
Balearic Islands†	5
Belgian Congo†	4
Belgium†	60
Bermudas†	2
Bolivia§	9
Brazil§	311
British E. Africa†	6
British Guiana†	3
British Honduras†	1
British W. Africa†	15
British W. Indies†	12
Bulgaria‡	10
Burma§	47
Canada*	105
Canary Islands†	5
Cape Province (S. Africa)†	10
Ceylon†	9
Channel Islands†	5
Chile§	40
China□	900
Colombia‡	39
Costa Rica‡	4
Cuba‡	49
Curaçao‡	4
Cyprus†	7
Czechoslovakia§	41
Denmark§	160
Dominican Republic‡	5
Ecuador‡	25
Egypt§	50
Eire†	8
England♁	130
Fiji Islands†	1
Finland§	64
France§	230
Fr. Indo-China†	6
Fr. W. Africa†	2
Fr. W. Indies†	1
Germany†	44
Gibraltar†	1
Greece§	62
Guatemala‡	7
Haiti‡	7
Hawaii*	7
Honduras‡	6
Hungary§	53
Iceland†	6
India§	300
Iran†	14
Iraq†	27
Ireland, Northern†	5
Israel‖	16
Italy§	119
Japan¶	119
Korea, Republic of♀	61
Lebanon§	40
Luxembourg§	6
Madagascar†	2
Madeira†	5
Malayan Federation†	20
Malta†	4
Mauritius†	8
Mexico‡	103
Morocco§	11
Mozambique†	2
Natal†	3
Netherlands§	80
Netherlands Indies†	35
New Caledonia†	1
New Zealand†	49
Nicaragua‡	12
Norway§	200
Orange Free State†	2
Pakistan†	43
Panamá‡	6
Paraguay§	3
Peru‡	55
Philippines*‖	13
Poland§	52
Portugal†	19
Portuguese India†	2
Port. W. Africa†	3
Puerto Rico‡	5
Rhodesia†	3
Rumania‡	42
Russia□	350
Salvador‡	9
Scotland†	16
Siam†	7
Singapore†	16
Spain‡	92
Sudan†	4
Sweden§	137
Switzerland§	117
Syria†	16
Tanganyika†	2
Transvaal†	7
Tunisia§	9
Turkey§	72
United States (continental)*	1,886
Uruguay‡	36
Venezuela‡	20
Virgin Islands*	3
Wales†	4
Yugoslavia‡	31
Total	7,195

*N. W. Ayer & Son's *Directory of Newspapers and Periodicals* (1949).

†*The Newspaper Press Directory* (London, 1949).

‡*Editor and Publisher International Year Book* (1949).

§*Report of the Commission on Technical Needs in Press, Film, Radio*, 3 vols., United Nations Educational, Scientific and Cultural Organization (Paris, 1947, 1948, 1949).

‖*Editor and Publisher* (Sept. 17, 1949).

¶*The Japanese Press Past and Present* (Tokyo, 1949).

♀Correspondence, chiefly with information bureaus of embassies and consular offices in U.S.

♁Report of Royal Commission on the Press, p. 8 (London, 1947–49).

□Estimates for 1949, based on such information as was available in Jan., 1950.

—running to about 100,000 words—vindicated the press on the more exaggerated charges brought against it but criticized certain newspapers for excessive partisanship and distortion of news. The commission's chief recommendation was for the establishment of a voluntary general council of the press.

Other recommendations were that chain newspapers should be required by law to carry on the front page a statement indicating their common ownership, and that if local monopolies in a considerable area should be found not to be within the purview of the Monopolies commission, the Monopolies and Restrictive Practices act should be amended to bring newspaper monopolies in areas of this size within its scope. The commission found that the case against chain organizations had been overstated; it did not favour state ownership of newspapers; and in stating that the press was free from corruption said that it was generally agreed that the British press was inferior to none in the world.

The *Times* announced that its air edition, which made its first appearance in 1944, had attained a world circulation. The paper was available in most places in Europe on the day of issue; New York, west Africa, Egypt and the Sudan on the following day; and south and east Africa two days after leaving London. Over 14,000 copies were flown to readers abroad daily.

New periodicals included *British Farm Mechanization; World Crops; Journal of African Administration; Corona,* the journal of the colonial service; the *Cornish Review;* and *Archives,* the journal of the British Records association.

Commonwealth.—The price of all South African daily newspapers was increased from 2*d*. to 3*d*. on Dec. 1. At the beginning of the year newspapers in Australia were freed from restrictions on newsprint and from price control of advertisement rates for the first time in ten years. Daily Mirror Newspapers, Ltd., and Sunday Pictorial Newspapers (1920), Ltd., bought a controlling interest in the *Melbourne Argus* and the *Australasian Post*. The *Sydney Morning Herald* began publication of a Sunday edition, which within six months had attained a circulation of 270,000.

An agreement was concluded which made the newspapers of India joint owners with Great Britain, Australia and New Zealand, of Reuters, Ltd. Two new newspapers made their appearance in Bombay, the *Evening Star* and *Bharat;* the city then had nine English-language dailies. An American syndicate was formed to purchase newspapers in India and other Asiatic countries. Its first acquisition was the *Civil and Military Gazette* (published in Lahore and Karachi).

Europe.—The year saw some important developments in western Germany. In 1946, when certain newspapers were licensed by the occupying powers, none of the former nazi dailies were allowed to appear, but several of their owners were permitted to continue as printers. When, in Sept. 1949, the Allies gave up their licensing control over the German press it was feared that many of the pronazi newspapers would re-emerge. Some local sheets with nazi associations did in fact appear in anticipation of the ending of licensing, but these were suppressed by the British authorities. In the U.S. zone it was said that of the 106 newspapers due to start on Sept. 1, 80% would be "chauvinistic, rabble-rousing, antidemocratic, anti-Semitic and anti-American." The democratic press very soon felt the strain of competition, and there was a general decline in circulations—*Die Welt*, Hamburg, the official British German-language newspaper, dropped from nearly 1,000,000 to 500,000. A law was passed by the Allied High commission giving the high commissioners power to act in cases of printed statements derogatory to the occupation powers or which might display the nazi spirit.

Pressure in the "iron curtain" countries continued as before. Godfrey Lias, Prague correspondent of the *Times*, and John Fisher, an Australian journalist, left Czechoslovakia at the request of the Czechoslovak government. In Finland a printers' strike in March stopped all except the Communist and Social Democrat newspapers for nearly three weeks. Roman Catholic printing offices in Poland were placed under state control, so that nearly all Catholic newspapers in Poland were printed on state-owned presses. *For a Lasting Peace, for a People's Democracy!* the journal of the Cominform published in Bucharest, Rumania, was changed from a fortnightly to a weekly in September. The English-language newspaper *Moscow Daily News* closed down in February. (*See* also Advertising.)

(D. Hn.)

New York.

One of the original 13 states of the United States, popularly known as the "Empire state," New York covers an area of 49,576 sq.mi. of which 1,647 are water. With a population of 13,479,142 (federal census, 1940) and an estimated population of 14,392,000 (U.S. bureau of the census, July 1, 1949), it is the most populous state. The foreign-born population in 1940 was 2,853,530. The urban population was 11,165,893. The 1949 population of principal cities imated by the state health department, included: Albany ate capital), 144,067; New York city, 8,161,000; Buffalo, 7,967; Rochester, 337,730; Syracuse, 222,740; Yonkers 146,- 5; Utica, 98,717; Schenectady, 98,081; Niagara Falls, 89,226; nghamton, 84,510.

History.—Gov. Thomas E. Dewey approved 858 bills passed the 1949 session of the legislature. Several measures were opted for the improvement of the educational system of the te including an increase of $40,000,000 in state aid. Also icted was a new disability benefits law, designed to comple- nt the workmen's compensation law and the unemployment urance law by providing protection when the employee be- nes sick or disabled without regard to his employment. It ovided benefits of $10 to $26 weekly, payable up to 13 eks in a year. Employers and employees both were to con- bute to the costs of the program.

Under a new water pollution control law, which passed both uses of the legislature unanimously, a permanent Water llution Control board composed of the heads of the state de- rtments of health, conservation, agriculture and markets, mmerce, and public works was to make technical studies of various water courses of the state and establish water qual- standards and stream classifications.

Resignation of U.S. Senator Robert F. Wagner in June cessitated a special senatorial election to fill the remainder of term, which was to expire in 1951. John Foster Dulles, ernational affairs expert, named by Governor Dewey to fill interim term, was later nominated by the Republican party the office. The Democrats and the Liberal party chose rbert H. Lehman, a former governor, as their candidate for senate post. In the election Nov. 8 former Governor hman defeated Senator Dulles by a margin of 198,057 votes.

New York state voters in 1949 approved eight amendments to state constitution and supported three propositions. The w amendments included one which gave disabled veterans a n-point preference in open-competitive civil service exami- tions and five points on promotion tests for those already in blic service, while nondisabled veterans were granted five and o and one-half points, respectively. In contrast to the exist- system of absolute preference, whereby disabled veterans ssing civil service examinations must be appointed before ndisabled veterans and the latter before nonveterans, the ap- oved amendment effective in Jan. 1951 would allow the ap- inting authority to select any of the first three candidates. terans might use the point preference only once, either to tain original appointment or on promotion.

The chief officers of the state in 1949 were: Thomas E. ewey, governor; Joe R. Hanley, lieutenant governor; Frank Moore, comptroller; Nathaniel L. Goldstein, attorney gen- l; Thomas J. Curran, secretary of state; Francis T. Spauld- , commissioner of education.

Education.—In 1948 there were in New York state 5,688 elementary blic schools with 1,310,420 pupils; 991 public high schools with 564,- 5 students; 1,050 private and parochial schools with 372,621 pupils the elementary grades and 83,252 students in 293 secondary schools. ere were 114 colleges and universities in the state. Special state ools included seven Indian schools; 11 agriculture and technical institutions; 135 schools for nursing; 3 institutes for the blind and 6 institutes for the deaf.

Table I.—*Leading Agricultural Products of New York*

Crop	Production 1949	Production 1948	Average 1938–47
n, bu.	29,610,000	27,120,000	24,063,000
eat, bu.	11,760,000	12,452,000	7,364,000
s, bu.	22,591,000	28,320,000	23,767,000
ley, bu.	1,800,000	2,752,000	3,090,000
kwheat, bu.	1,360,000	1,767,000	2,210,000
hay, tons	4,878,000	6,306,000	5,770,000
ns, dry (100-lb. bags)	1,540,000	2,078,000	1,174,000
acco, lb.	650,000	650,000	1,215,000
atoes, bu.	30,660,000	38,035,000	30,558,000
les, bu.	20,090,000	11,750,000	14,620,000
ches, bu.	1,428,000	1,114,000	1,340,000
rs, bu.	1,195,000	384,000	945,000
pes, tons	48,400	65,200	53,470
ons, sacks	6,205,000	8,305,000	—

Table II.—*Estimated Value Added by Manufacture and Number of Employees in Ten Leading Manufacturing Industries, New York State*

Industry	Value added, 1948* (in millions)	Number employed† 1948
Apparel and related products	$1,996	417,318
Printing and publishing industries	1,229	156,108
Food and kindred products	1,065	146,277
Primary metal industries and fabricated metal products	880	171,736
Machinery (except electrical)	706	137,146
Chemicals and allied products	644	76,219
Electrical machinery	482	127,912
Textile mill products	482	95,702
Transportation equipment	451	79,546
Paper and allied products	400	65,273

*Estimates by the New York state department of commerce.

†Estimates by the New York state department of labour, division of placement and unemployment insurance.

Social Insurance and Assistance, Public Welfare and Related Programs.—The 1,060,000 persons given assistance, care or service at public expense in 1948 represented an increase of 85,000 persons over 1947. During 1948 expenditures for public assistance totalled $318,030,383. Of this sum the federal government's share was $53,829,341, the state's share $122,944,577 and the local share $141,256,465. An additional 2,383,000 persons were given assistance or care in the state as private charges.

During 1948 the state paid unemployment insurance claims of $184,407,661. At the end of 1948 the New York State Unemployment Insurance Trust fund had a balance on hand of $1,050,059,262.

The state has seven maximum security prisons, a medium security prison and a prison for women; two reformatories for males and one for females; two institutions for male defective delinquents and one for females; and two hospitals for the criminal insane. In 1948 the average cost for the care and maintenance of institutional inmates was $1,350 per person. The average yearly population of the state's correctional institutions is 16,500 inmates.

For the care and treatment of the mentally ill, mental defectives and epileptics, in 1948 the state maintained 18 hospitals for mental disease, 6 schools for mental defectives, a colony for epileptics, a state psychiatric institute and hospital for research and teaching and a psychopathic hospital for observation and temporary treatment of mental patients. In 1949 there was a great expansion of the state's mental hygiene program.

Table III.—*Principal Mineral Production in New York State*

Mineral	Production, 1947	Value
Portland cement	11,592,821 bbl.	$21,060,957
Gypsum, crude	949, 375 short tons	2,613,094
Lead	1,496 " "	430,848
Natural gas	4,776,000 million cu.ft.	3,535,000
Petroleum	4,762,000 bbl.	20,075,000
Salt	20,878,736 "	11,875,485
Other sand and gravel	13,317,105 short tons	9,896,930
Limestone	9,908,880 " "	12,676,404
Zinc	34,116 " "	8,256,072

Communications.—New York state had 83,766 mi. of roads on Jan. 1, 1948, of which 14,297 mi. were state highways (exclusive of city and village streets) and 70,940 mi. county and town roads. Hard surfaced roads totalled 63,900 mi. The 40 railroads in the state operated 7,639 mi. of tracks. The state maintains a system of more than 500 mi. of canals. Including the rivers and lakes which are part of the New York State Barge Canal system, the total length is more than 800 mi. New York state leads the nation in air passenger traffic, domestic air cargo and value of airborne imports and exports. LaGuardia airport alone, prior to July 1, 1948, accounted for 80% of the country's airborne imports and for more than 40% of exports. During the first eight months of 1949 the three major commercial airports of the New York metropolitan area (LaGuardia, Newark and New York International at Idlewild), handled a combined volume of 60,000 tons of air cargo and 2,500,000 passengers. The New York state department of commerce in Dec. 1949 reported 250 airports operating in the state, including 45 municipal, 195 privately owned, 7 military, 2 CAA intermediate fields and one glider field.

Banking and Finance.—At the end of 1948 there were 782 banks with total resources of $45,398,900,293 and deposits of $40,693,238,297 operating in the state. There were also 236 savings and loan associations with $1,147,665,000 of total assets and $1,001,579,000 due private share holders.

The state's financial status for the fiscal year ending March 31, 1949, was as follows: general revenue $727,513,941.12; expenditures $725,238,738.54; total surplus $2,275,202.58; state debt $675,183,199. Capital Construction fund (formerly Postwar Construction fund) Reserve for postwar construction and reconstruction: appropriated $447,354,295.46. Under the 1949–50 budget the state was to pay to local government units more than half of the total state revenue and retain the balance for its own use. The 1949–50 fiscal year appropriations totalled $939,585,471.44 of which $422,050,014.44 were for state purposes and $517,535,457 for local assistance.

Agriculture.—Gross sales of agricultural products totalled $966,422,000 in 1948. In addition, government payments to farmers were $5,159,000 compared with payments of $7,918,000 in 1947. The sale of milk and cream in 1948 amounted to $400,453,000. The total harvested acreage in 1949, excluding orchards and vineyards, was 6,396,000 ac. The value of livestock and poultry on farms as of Jan. 1, 1949, was $515,776,000. Cattle in the state totalled 2,182,000 head. There were also 15,838,000 chickens, 167,000 horses, 2,000 mules, 236,000 hogs and 188,000 sheep. The number of turkeys raised in the state in 1948 was 763,000.

Manufacturing and Industry.—Approximately 70% of the country's total output of women's dresses, coats, blouses and furs are produced in New York state, as are 42% of men's and boys' tailored clothes. The state also leads all others in printing and publishing, the rug and carpet industry and the output of photographic goods—producing 66% of the latter. In 1947 the state's manufacturing firms added $9,635,800,000 in value to the raw and semifinished material they purchased for processing, compared with $3,313,600,000 in 1939, according to the U.S. census.

In 1949, an all-time high total of 575,000 business firms in the state was reached. As of Oct. 1949 an estimated total of 5,537,081 were employed exclusive of agricultural workers, proprietors, domestics and personnel of the armed forces. Average weekly factory earnings in Sept. 1949 were $58.24. Retail sales in the state in 1948 were estimated at $13,695,420,000.

Mining.—New York state in 1948 produced an estimated $140,000,000 in mineral products. An estimated 6,500,000 tons of crude iron ore were produced in that year.

New York City.

The 1949 population of New York city was estimated at 8,161,000. The City polled the largest mayoralty vote in its history in the 1949 election and returned Mayor William O'Dwyer and the principal officers of his first administration to office.

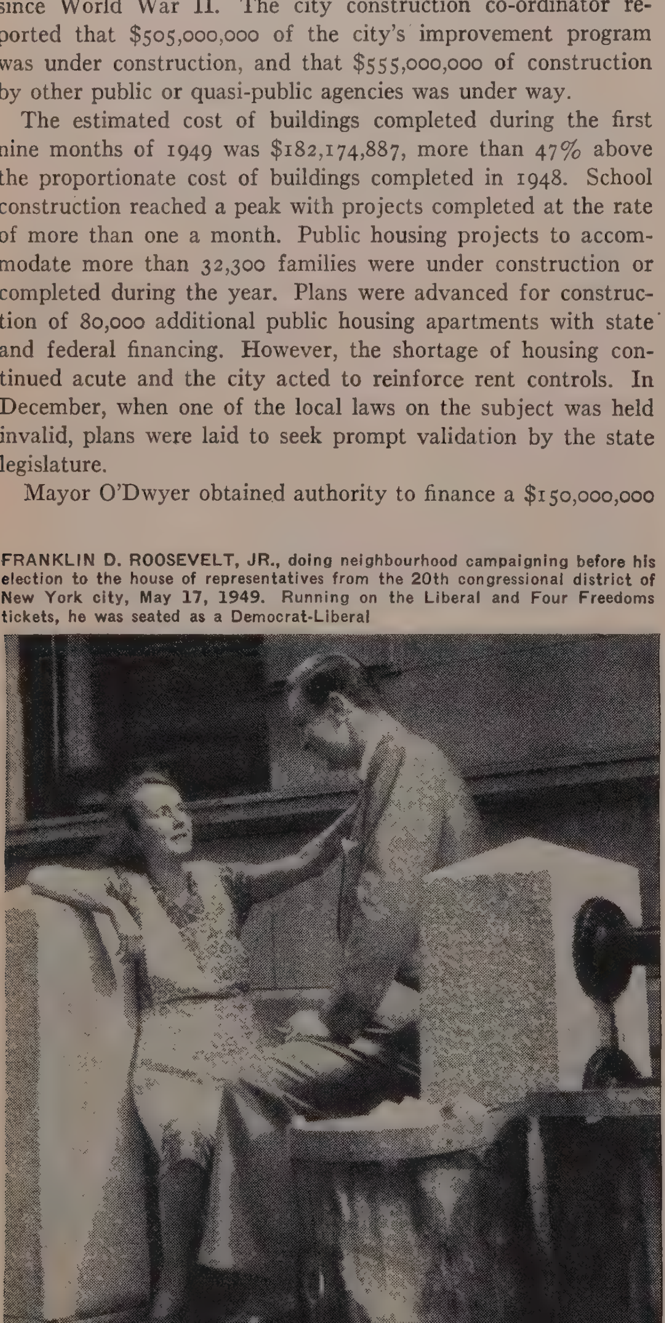
On the fourth anniversary of the founding of the United Nations, the cornerstone of its permanent home was laid in an historic meeting of the general assembly on the site. In 1949 the city of New York contributed $23,000,000 in property and services to the establishment of the permanent U.N. headquarters on the East river.

Construction, public and private, rose to the highest level since World War II. The city construction co-ordinator reported that $505,000,000 of the city's improvement program was under construction, and that $555,000,000 of construction by other public or quasi-public agencies was under way.

The estimated cost of buildings completed during the first nine months of 1949 was $182,174,887, more than 47% above the proportionate cost of buildings completed in 1948. School construction reached a peak with projects completed at the rate of more than one a month. Public housing projects to accommodate more than 32,300 families were under construction or completed during the year. Plans were advanced for construction of 80,000 additional public housing apartments with state and federal financing. However, the shortage of housing continued acute and the city acted to reinforce rent controls. In December, when one of the local laws on the subject was held invalid, plans were laid to seek prompt validation by the state legislature.

Mayor O'Dwyer obtained authority to finance a $150,000,000 hospital construction program when a state-wide vote approved an amendment to the state constitution to exclude $150,000,000 from the city's legal debt limit for this purpose. A $42,000,000 hospital construction program which was nearing completion, would furnish 3,071 beds to which would be added an estimated 8,700 financed under the constitutional amendment.

FRANKLIN D. ROOSEVELT, JR., doing neighbourhood campaigning before his election to the house of representatives from the 20th congressional district of New York city, May 17, 1949. Running on the Liberal and Four Freedoms tickets, he was seated as a Democrat-Liberal



The last months of 1949 found New York city grappling with the most critical water shortage in memory. During the summer, the New York water-sheds were parched by draught. Construction of the Delaware Water Supply system, initiated in 1937 but suspended during World War II, was several years from completion. With consumption averaging 1,150,000,000 gal. per day, 175,000,000 gal. more than in 1937, water in the reservoirs fell to one-third of capacity. A crisis was averted through a campaign for voluntary conservation which, at the end of the year, had curtailed consumption by 310,000,000 gal. per day. (*See* also MUNICIPAL GOVERNMENT.)

FILMS OF 1949.—*Empire State Building* (World in Color Productions); *The Story of a City—New York* (Simmel-Meservey).

New Zealand, Dominion of.

A self-governing member of the Commonwealth of Nations, New Zealand consists of two large and several small islands in the south Pacific. Area: dominion proper 103,416 sq.mi.; other islands 519 sq.mi. Pop.: dominion proper (est. June 1948) 1,840,182 including 109,811 Maoris; Cook and other Pacific islands 19,167; Tokelau Islands (1945 census) 1,388. Western Samoa, a trusteeship, has an area of 1,133 sq.mi. and a pop. (est. mid-1948) of 73,000. Chief cities (est. April 1948): Wellington (cap., 186,000); Auckland (289,000); Christchurch (164,000); Dunedin (88,800); Palmerston North (30,100). Language: English. Religion: mainly Christian (Anglican 37.5%, Presbyterian 23.4%, Roman Catholic 13.5%). Ruler: King George VI; governor general, 1949: Lieut. Gen. Sir Bernard Cyril Freyberg; prime ministers: Peter Fraser and (from Dec. 13) Sidney George Holland.

History.—The principal event of the year 1949 was the defeat of the Labour party by the National party in the general election held on Nov. 30. The National party of S. G. Holland, the new prime minister, returned to office on a program of relaxation of controls, discontinuance of further schemes of nationalization and a reaffirmation of the merits of private enterprize. The National party promised not to reduce the existing system of social security.

The year saw the wave of economic prosperity in New Zealand still high, and reflected throughout the whole community. Prices for crossbred and merino wool broke all records, and high production in other primary industries made New Zealand Britain's chief supplier of meat, butter and cheese. Record production was achieved in timber milling and food processing works. The buoyancy of the prosperity wave was reflected in the conversion of a £29,000,000 debt loan domiciled within the country. Later in the year two further conversions on the London market were equally successful.

In the field of international affairs New Zealand sent an observer to the conference on Indonesia and the government recorded support for the antarctic agreement reached between Argentina and Great Britain. Representation on the Far Eastern commission was continued, while Lieut. Col. F. W. Voelcker and C. G. R. McKay represented the country on the South Pacific commission. James Thorn, high commissioner for New Zealand in Canada, was appointed president of the U.N. Economic and Social council. New responsibilities in the administration of Western Samoa and Nauru Island under the United Nations trusteeship agreement were assumed.

Legislation giving the state the sole right to transact workers'

mpensation insurance became effective. A national referen-
m on the question of gaming and hotel licensing hours was
ld, the majority favouring off-course betting through the
isting totalizator facilities. The referendum also decided to
ntinue the existing licensing laws whereby hotel bars close
6 P.M.

Emigrants from Britain in the postwar period to March 31,
49, totalled 33,786. Of this total, 5,195 of single status and
ecially selected received government assistance.

A defence scheme involving compulsory military service was
bmitted to a national referendum and approved by 535,016
152,575. The expansion of navy and air force units was also
tlined.

Foundations were laid for the development of a salt industry
Lake Grasmere and of a state factory to manufacture news-
int and other wood pulp products at Murupara. New tests
r smelting iron sands from Taranaki beaches by electrical
ocesses were successful. (A. T. CL.)

Education.—(Dec. 1947) Primary schools 2,270, pupils 259,182, teach-
8,215; secondary schools 229, pupils 37,229, teachers 1,897; sec-
dary schools for Maoris 16, pupils 804; technical schools 28, pupils
328 (part-time 18,697), teachers 706; university colleges 6, students
764; training colleges 4, students 1,564.

Finance and Banking.—Budget (consolidated fund and social security
d excluding war expenses account): (1948–49 actual) revenue £N.Z.-
,961,000, expenditure £N.Z.166,890,000; (1949–50 est.) revenue
.Z.153,033,000, expenditure £N.Z.154,939,000. Gross national debt
ec. 1947): £N.Z.5,989,000,000. Currency circulation (Sept. 1949):
.Z.45,700,000. Gold reserve (Sept. 1949): 29,000,000 U.S. dollars.
posit money (Aug. 1949): £N.Z.146,700,000. Monetary unit: New
aland pound with an exchange rate of 2.76 U.S. dollars per New Zea-
d pound, from Sept. 19, 1949.

Foreign Trade.—Imports (1948), £N.Z.128,800,000; exports (1948),
.Z.147,300,000. Main sources of imports in 1948: United Kingdom
%, Australia 11%, United States 11%. Main destinations of ex-
ts in 1948: United Kingdom 73%, United States 5%.

Transport and Communications.—Roads (1948) 76,401 mi. Licensed
tor vehicles (Dec. 1948): cars 228,562, commercial vehicles 73,570.
te railways (1948–49): 3,526 mi.; passenger journeys 26,000,000;
ight net ton-miles 980,000,000. Shipping (Dec. 1947): number of
istered vessels 478, total net tonnage 95,089. Air transport (1948–49):
es flown 7,600,000, passengers flown 215,200. Telephones (March
48): subscribers 222,504. Radio receiving set licences (March 1948)
,983.

Agriculture and Fisheries.—Main crops (in metric tons, 1948–49):
eat 150,000; barley 45,000; oats 50,000; potatoes 136,000. Livestock:
nbs (April 1948) 7,947,000; breeding ewes (April 1948) 21,055,000;
al sheep (April 1948) 32,483,000; dairy cows and heifers (Jan. 1948)
38,000; beef stock (Jan. 1948) 2,078,000; total cattle (Jan. 1948)
16,000; pigs (Jan. 1948) 548,000; horses (Jan. 1949) 200,000.
heries: total catch (1946): weight 32,047 metric tons. Food produc-
n: meat (in metric tons bone-in-weight, 1946–47): total carcasses
,873 of which beef 170,748, veal 18,514, mutton 130,697, lamb 188,-
, pig meat 35,495; edible offal (in metric tons, 1946–47) 22,476;
terfat (in metric tons, 1947–48) 190,500; creamery butter (in metric
s, 1947–48) 151,500; cheese (in metric tons, 1947–48) 87,700. Wool
duction (in metric tons, greasy basis, 1948–49) 166,000.

ndustry.—(1948) Industrial establishments 35,579; persons employed
,480. Fuel and power (1948): coal (in metric tons) 969,000; lignite
metric tons) 1,851,000; manufactured gas 155,000,000 cu.m.; elec-
city 2,590,000,000 kw.hr. Raw materials (in metric tons): pumice
47) 3,443; white arsenic (1947) 8; superphosphates (1948) 558,400.
ld ore (in fine troy ounces, 1948) 93,903; silver ore (in fine troy
nces, 1948) 232,563.

caragua.

A republic in Central America, Nicaragua is sit-
uated between Honduras on the north and Costa
ca on the south. Area: 57,145 sq.mi., of which 3,475 sq.mi. is
ter. Pop. (off. est., Dec. 31, 1948) 1,172,862. Capital, Mana-
(1948 pop., 146,819); other urban centres: Chinandega
,112), Granada (39,643), Jinotega (41,065), León (53,277),
saya (38,761) and Matagalpa (53,118). Language: Spanish;
igion: predominantly Roman Catholic. President in 1949:
ctor M. Román y Reyes.

History.—The major political issue during 1949 was the
tional conciliation program, designed to bring about a coali-
n of all parties and to present a single presidential candidate
the next election. The pact which was subscribed to by the
tionalist Liberal (administration) party and the "civilista"
nservatives in Feb. 1948, was reactivated during the year, but
ministrative attempts to bring the "genuine" Conservatives
the Independent Liberals into the coalition were fruitless.

As a conciliatory gesture to the "genuine" Conservatives, the government invited their exiled chief, Gen. Emiliano Chamorro, to return to the country. Chamorro returned June 18, but although talks between him and both President Román y Reyes and Gen. Anastasio Somoza continued until late November, no agreement was reached. The Conservative party's opposition to national conciliation was expressed in September when it ousted Carlos Cuadra Pasos from its leadership for his part in the Feb. 1948 agreement between the "civilista" Conservatives and the administration party. The temporary arrest of Arturo Velázquez Alemán, secretary-general of the Independent Liberal party, on Mar. 21, intensified the antagonism of his group toward the official party.

A major point of contention was the influence in the government and the possible presidential candidacy of General Somoza, both of which were ardently opposed by the Independent Liberals. A tour of the Atlantic coast districts by Somoza and a public demonstration in his behalf on his return to Managua in May were interpreted in some quarters as a bid by Somoza for the presidency in the next election. A new political party, the National Union of Popular Action, was organized in October by a heterogeneous group tied together by extreme nationalism and opposition to Somoza.

On the economic front, Nicaragua continued to suffer an unfavourable balance of trade and shortage of dollar reserves, but was able to repurchase 2,500,000 córdobas from the International Monetary fund and thus restore $500,000 purchased from the fund in 1948. Higher coffee prices in the latter part of the year gave promise of an improved economic position.

A strike of 1,200 workers of the Bonanza gold mines and about the same number of stevedores in the port of Corinto, on the Pacific coast, were the major labour difficulties.

Education.—During the 1948–49 school year there were 1,302 primary schools with 2,918 teachers and 89,991 students, 78 secondary schools with 556 teachers and 10,891 students and 2 universities with 620 students. For the same year the national budget provided 7,764,390 córdobas for public education.

Finance.—The monetary unit is the córdoba, officially maintained at 20 cents U.S. The 1949–50 national budget provided for expenditures of 54,303,730.16 córdobas, a 14% reduction from the previous year. As of Dec. 31, 1948, the public debt was 28,873,741.22 córdobas, internal, and 17,276,355.60 córdobas, external. At the same date there were six banks with capital and reserves amounting to 9,963,000 córdobas and current deposits of 42,534,490.53 córdobas. Gold and foreign-exchange holdings totalled $366,499.84 U.S. Bills in circulation amounted to 50,601,000 córdobas. Commercial credit extended by the National bank was reduced from approximately 28,000,000 córdobas on Feb. 28 to 12,500,000 córdobas on July 31, 1949, to meet recommendations of the International Monetary fund.

Trade and Resources.—Exports during 1948 were valued at $26,682,607 U.S. ($20,900,000 in 1947); imports, $24,133,703 ($20,800,000 in 1947). The U.S. supplied 85.5% of the imports and took 43.8% of the exports. In 1948 the leading shipments were gold (182,964.16 troy oz.), coffee (242,017 bags of 132 lb. each), bananas (678,598 stems) and sesame seed (26,565,633 lb.). Gold production in 1948 amounted to 218,019 troy oz.; silver, 214,628 oz. Coffee exports from the 1948–49 crop (the lowest since 1912) totalled 109,609 bags.

Communications.—In 1949, railroads measured 236.2 mi.; surfaced highways 417.5 mi.; all-weather dirt roads 79.4 mi.; telegraph lines 3,183.8 mi.; telephone lines (1946) 4,748 mi.; and radio broadcasting stations numbered 26. At the close of 1948 there were 1,443 automobiles, 672 trucks and 151 buses registered in the country.

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Nickel.

The bulk of the world's supply of nickel comes from Canada, but outputs of other significant producers

Table I.—*World Production of Nickel*
(In short tons)

	1943	1945	1946	1947	1948
Canada	144,009	122,565	96,062	118,627	131,075
Cuba	2,679	12,015	12,391	2,220	—
Finland	9,888	992	662	?	?
Greece	545	—	—	—	—
Japan	1,778	717	?	?	?
New Caledonia	8,128	4,771	3,063	3,687	5,381
Norway	636	569	61	—	—
South Africa	378	550	548	583	505
U.S.S.R. (est.)	12,300	14,800	22,000	27,500	27,500
United States	642	1,155	352	646	883
Total	184,000	160,000	135,500	153,000	165,000

and the estimated world totals during several recent years are shown in Table I.

United States.—Imports from Canada form the major source of supply of nickel in the United States, the important features of which are covered in Table II, as reported by the U.S. bureau of mines.

Table II.—*Nickel Supply in the United States*
(In short tons)

	1943	1945	1946	1947	1948
Production	642	1,155	352	646	883
Secondary recovery .	6,917	6,483	8,248	9,541	8,850
Imports*	141,249	122,528	104,734	88,408	101,321
Exports*	9,464	3,876	7,977	12,037	8,209
Consumption.	?	96,252	80,105	80,757	93,558

*Includes gross weight (not nickel content) of ore, matte, oxide and alloys.

Canada.—There was a sharp increase in 1948 in both production and exports, and extensive development work was under way in the mines to expand the ore reserves. Proved ore reserves were increased during 1948 from 7,171,000 tons of nickel-copper content to 7,503,000 tons. Production in 1949 was maintained at about the same rate as in 1948, but exports increased, the total of production through August being 85,485 tons, and of exports 90,050 tons. (G. A. Ro.)

Niger: *see* FRENCH UNION.
Nigeria: *see* BRITISH WEST AFRICA.
NLRB: *see* NATIONAL LABOR RELATIONS BOARD.

Nobel Prizes.

The Nobel prizes, for literature, physics, chemistry, medicine and peace, established by the Swedish industrialist, Alfred Bernhard Nobel (1833–1896), were first awarded in 1901. Each award consists of a gold medal and a sum of money which fluctuates with the income from the fund but was reported in 1949 to be approximately $30,000. In 1949, for the fourth time in the history of the award, no prize was given in literature. The award for physics went to Hideki Yukawa (*q.v.*), professor of physics at Kyoto university, Japan, and during 1949 visiting professor of physics at Columbia university. Yukawa, the first Japanese to receive a Nobel prize, received the award for his contribution to physics in predicting the existence of an elementary particle, the meson. The prize in chemistry was awarded to William Francis Giauque (*q.v.*), professor of physical chemistry at the University of California, Berkeley, for his work in the field of thermodynamics. The prize in medicine was given jointly to the brain specialists, Walter Rudolf Hess (*q.v.*), director of Zurich university's Physiological institute, Switz., and Antonio Egas Moniz (*q.v.*), professor emeritus of neurology in the faculty of medicine of the University of Lisbon, Port. The peace prize was awarded to Lord Boyd-Orr (*q.v.*), former head of the United Nations Food and Agriculture organization. (R. E. Bs.)

Norfolk Island: *see* BRITISH EMPIRE.

North Atlantic Treaty.

The North Atlantic treaty, a collective defense agreement, was signed in Washington, D.C., on April 4, 1949, by the following twelve states: Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States. The treaty was quickly ratified by the signatories and entered into force in July.

Patterned closely after the inter-American treaty of mutual assistance concluded at Rio de Janeiro, Brazil, in 1947, the North Atlantic agreement was designed to facilitate the joint defense of the signatories against any threat to their territorial integrity or political independence, or against any armed attack upon their territories in Europe or North America (including the Algerian departments of France), their occupation forces in Europe, islands under their jurisdiction in the Atlantic ocean (north of the Tropic of Cancer) or any vessel or aircraft in this area. In the event of a threat to their security, the parties agreed to consult together but not necessarily to take any collective action. On the other hand, should an armed attack against any one of them occur, they would consider it as an attack against all and assist the victim (or victims) by whatever measures, including the use of armed force, they deemed necessary, acting individually and in concert.

The treaty further stipulated that the parties should develop "continuous and effective self-help and mutual aid" in order to increase their capacity to resist aggression. With a view to implementing this provision, a consultative council was envisaged, together with such subsidiary bodies, including a defense committee, as they considered necessary. Other states might be invited to adhere to the treaty, but only with the unanimous consent of the original signatories. After 10 yr., the parties promised to consult together, if any of them so requested, for the purpose of reviewing the treaty; after 20 yr., any party might denounce the agreement on 1 yr.'s notice.

The initiative for the negotiation of the treaty came from the United States. Its underlying conception may be traced to a resolution introduced by Senator Arthur H. Vandenberg and adopted by the senate by a vote of 64 to 4 on June 11, 1948. This resolution called for the "progressive development of regional and other collective arrangements for individual and collective self-defense in accordance with the purposes, principles, and provisions of the (United Nations) Charter" and the "association of the United States, by constitutional processes," with such arrangements. As the Security council of the United Nations found itself more and more paralyzed because of the abuse of the veto by the Soviet Union, and as the latter power proceeded to consolidate its control behind the "iron curtain," an increasingly insistent demand for some effective counteraction developed in the United States and western Europe.

Conversations between the U.S. state department and the Brussels pact powers (Belgium, France, Luxembourg, Great Britain and the Netherlands), begun in July 1948, resulted in an agreed treaty text by the following March. As the negotiations neared their conclusion, it was decided for strategic reasons to invite five additional states to become parties to the proposed pact—Norway, Italy, Iceland, Denmark and Portugal. Norway's adherence was given only after considerable hesitation in view of the efforts of Sweden to promote a Scandinavian defense union, the traditional "neutrality" policy of the Scandinavian states and a threatening note from the U.S.S.R. to Norway inquiring whether the latter intended to grant air or naval bases to the Atlantic powers. Upon receiving Oslo's reply that it would do so only in case of an actual attack, the U.S.S.R. proposed a nonaggression pact, which was categorically refused. Norway then accepted the Washington offer.

Moscow was quick to denounce the projected Atlantic pact as an aggressive alliance pointed at the Soviet Union and the "people's democracies" of eastern Europe. In the soviet view, the treaty contradicted the Anglo-soviet and Franco-soviet mutual assistance treaties concluded a few years earlier and violated the provisions of article 53 of the United Nations charter relating to regional security arrangements. According to this article, observed the soviet government, no enforcement action could legally be taken under any such regional arrangement without the authorization of the Security council.

In answering these charges, U.S. Secretary of State Dean G. Acheson pointed out that the treaty was based upon "the inherent right of individual and collective self-defense" recognised in article 51 of the charter. This right could be exercised in the event of an armed attack as long as the Security council did ot take measures necessary to maintain peace and security. he treaty was not a regional arrangement in the sense of ticles 52 and 53, but a "voluntary association of freedom and eace-loving countries" to assure the defense of the North At- ntic area. Nothing in the treaty, concluded Acheson, affected e rights and obligations of the parties under the charter, or e primary responsibility of the Security council for the main- nance of international peace and security.

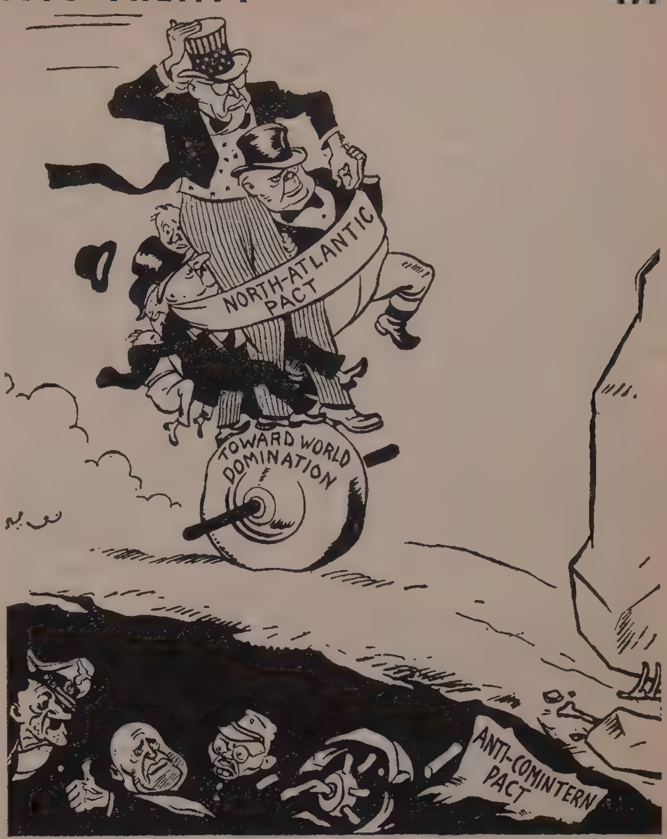
During the debate on the treaty in the United States senate, s opponents centred on the argument that its application might unge the country into war without congressional approval. he opposition also endeavored to condemn the agreement by sisting that a vote for it would in fact be a commitment to ote for the Military Assistance program shortly to be sub- itted to congress by the administration. There were some ho were afraid that the treaty would tend to widen the breach etween the soviets and the west, weaken still further the nited Nations and thereby lose its "preventive" force.

The administration met this attack by stressing that no party the treaty would be required to make any specific contribu- on to the defensive capacity of the other signatory states. east of all did it imply any "automatic obligation" to go to ar, which only congress could declare. Moreover, the treaty, r from being aimed at any particular power, was directed ainst aggression from whatever source. Even so, in the eyes certain critics not unfriendly to the foreign policy of the dministration, the treaty might better have been made an pen-ended" arrangement, leaving the door open to the .S.S.R. to enter if it wished. The debate ended, however, in overwhelming vote of 82 to 13 for ratification.

Steps were taken without delay to implement the provisions the treaty. The Consultative council, consisting of the for- gn ministers of the signatory states, held its first meeting in ashington in September and proceeded to establish a defense ommittee. This committee subsequently set up a military mmittee composed of the chiefs of staff (or their representa- ves) of each party, with headquarters in Washington. The ilitary committee in turn decided to create a "Standing roup" (representing the United States, the United Kingdom d France), whose task it would be to co-ordinate and integrate efense plans. Regional planning groups were also organized for e following geographical areas: northern Europe, western urope, southern Europe-western Mediterranean, Canada-United tates and the North Atlantic ocean.

In July the administration sent to congress its Military As- stance program which proposed an appropriation of slightly ore than $1,000,000,000 for military equipment, materials and rvices to Atlantic treaty countries requesting aid during the scal year 1949–50. After a lively discussion lasting nearly two onths, congress passed the Mutual Defense Assistance act ith only minor modifications. This act empowered the presi- ent to make available specified funds and to enter into contract thorizations as soon as he approved the recommendations of e North Atlantic council and defense committee for an in- grated plan for the defense of the North Atlantic area. Such plan was announced in November, and negotiations looking ward bilateral agreements with the principal Atlantic pact untries were then reported to be under way in Washington.

What effect the announcement in September that "an atomic plosion" had taken place in the Soviet Union might have on e military and political consequences of the North Atlantic reement remained uncertain as the year 1949 closed. Informed servers in the west appeared to agree that the long-run value the treaty would depend upon the extent to which it exerted restraining influence on soviet expansionist policy. Reflecting e growing division of the world into two armed camps, the treaty might possibly help to shift the power balance to the advantage of the west. In any case, however, the effective implementation of the new arrangement would rest on the good faith of the parties, since it did not provide for any executive machinery or procedure which would guarantee speedy and unified military action. Nor could Europe hope henceforth to become a significant makeweight in the bipolar struggle between Moscow and Washington, for the continent west of the "iron curtain" was inexorably drawn into the U.S. orbit. (*See* also ARMIES OF THE WORLD; EUROPEAN UNION.) (W. R. SP.)



SOVIET COMMENT on the North Atlantic alliance, by Yefimov, published in the *Literaturnaya Gazeta* (Moscow) in 1949 and captioned "Fascist Aggressors: 'We have already travelled along this path once.' "

NORTH ATLANTIC TREATY

PREAMBLE

The Parties to this Treaty reaffirm their faith in the purposes and principles of the Charter of the United Nations and their desire to live in peace with all peoples and all governments.

They are determined to safeguard the freedom, common heritage and civilization of their peoples, founded on the principles of democracy, individual liberty and the rule of law.

They seek to promote stability and well-being in the North Atlantic area.

They are resolved to unite their efforts for collective defense and for the preservation of peace and security.

They therefore agree to this North Atlantic Treaty:

Article 1

The Parties undertake, as set forth in the Charter of the United Nations, to settle any international disputes in which they may be involved by peaceful means in such a manner that international peace and security, and justice, are not endangered, and to refrain in their international relations from the threat or use of force in any manner inconsistent with the purposes of the United Nations.

Article 2

The Parties will contribute toward the further development of peaceful and friendly international relations by strengthening their free institutions, by bringing about a better understanding of the principles upon which these institutions are founded, and by promoting conditions of stability and well-being. They will seek to eliminate conflict in their international economic policies and will encourage economic collaboration between any or all of them.

Article 3

In order more effectively to achieve the objectives of this Treaty, the Parties, separately and jointly, by means of continuous and effective self-help and mutual aid, will maintain and develop their individual and collective capacity to resist armed attack.

Article 4

The Parties will consult together whenever, in the opinion of any of them, the territorial integrity, political independence or security of any of the Parties is threatened.

Article 5

The Parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all; and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defense recognized by Article 51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with the other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.

Any such armed attack and all measures taken as a result thereof shall immediately be reported to the Security Council. Such measures shall be terminated when the Security Council has taken the measures necessary to restore and maintain international peace and security.

Article 6

For the purpose of Article 5 an armed attack on one or more of the Parties is deemed to include an armed attack on the territory of any of the Parties in Europe or North America, on the Algerian departments of France, on the occupation forces of any Party in Europe, on the islands under the jurisdiction of any Party in the North Atlantic area north of the Tropic of Cancer or on the vessels or aircraft in this area of any of the Parties.

Article 7

This Treaty does not affect, and shall not be interpreted as affecting, in any way the rights and obligations under the Charter of the Parties which are members of the United Nations, or the primary responsibility of the Security Council for the maintenance of international peace and security.

Article 8

Each Party declares that none of the international engagements now in force between it and any other of the Parties or any third state is in conflict with the provisions of this Treaty, and undertakes not to enter into any international engagement in conflict with this Treaty.

Article 9

The Parties hereby establish a council, on which each of them shall be represented, to consider matters concerning the implementation of this Treaty. The council shall be so organized as to be able to meet promptly at any time. The council shall set up such subsidiary bodies as may be necessary; in particular it shall establish immediately a defense committee which shall recommend measures for the implementation of Articles 3 and 5.

Article 10

The Parties may, by unanimous agreement, invite any other European state in a position to further the principles of this Treaty and to contribute to the security of the North Atlantic area to accede to this Treaty. Any state so invited may become a party to the Treaty by depositing its instrument of accession with the Government of the United States of America. The Government of the United States of America will inform each of the Parties of the deposit of each such instrument of accession.

Article 11

This Treaty shall be ratified and its provisions carried out by the Parties in accordance with their respective constitutional processes. The instruments of ratification shall be deposited as soon as possible with the Government of the United States of America, which will notify all the other signatories of each deposit. The Treaty shall enter into force between the states which have ratified it as soon as the ratifications of the majority of the signatories, including the ratifications of Belgium, Canada, France, Luxembourg, the Netherlands, the United Kingdom and the United States, have been deposited and shall come into effect with respect to other states on the date of the deposit of their ratifications.

Article 12

After the Treaty has been in force for ten years, or at any time thereafter, the Parties shall, if any of them so requests, consult together for the purpose of reviewing the Treaty, having regard for the factors then affecting peace and security in the North Atlantic area, including the development of universal as well as regional arrangements under the Charter of the United Nations for the maintenance of international peace and security.

Article 13

After the Treaty has been in force for twenty years, any Party may cease to be a party one year after its notice of denunciation has been given to the Government of the United States of America, which will inform the Governments of the other Parties of the deposit of each notice of denunciation.

Article 14

This Treaty, of which the English and French texts are equally authentic, shall be deposited in the archives of the Government of the United States of America. Duly certified copies thereof will be transmitted by that Government to the Governments of the other signatories.

In witness whereof, the undersigned plenipotentiaries have signed this Treaty.

Done at Washington, the 4th day of April, 1949.

North Borneo: *see* BRITISH BORNEO.

North Carolina. A south Atlantic coast state, popularly known as the "Old North state" or the "Tar Heel state," North Carolina is one of the original 13 states of the union; area: 52,712 sq.mi. (49,142 sq.mi. land, 3,570 sq.mi. water); pop. (1940): 3,571,623, of which 974,175 (27.3%) were urban, 2,597,448 (72.7%) rural and 1,005,501 (28.2%) nonwhite. The bureau of the census estimated the population of the state on July 1, 1949, at 3,864,000, a gain of 8.2% from 1940. Capital: Raleigh (46,897); other cities: Charlotte (100,899); Winston-Salem (79,815); Durham (60,195); Greensboro (59,319); Asheville (51,310).

History.—The biennial legislature, which was in session in 1949 from early January to mid-April, made record-breaking appropriations for the biennium 1949–51 of $401,417,791 to operate the state agencies and institutions. It also appropriated $25,000,000 to be distributed equally among the 100 counties to aid in the construction or repair of public school buildings, and $72,827,734 for buildings and other permanent improvements at state institutions and agencies. The appropriations provided a salary increase of 20% to teachers and state employees for the remainder of the fiscal year 1948–49, retroactive to Oct. 1, 1948, and salary increases of 28½% to public school teachers and 20% to other state employees for the biennium 1949–51. It also submitted two bond issues to a popular referendum: (1) $200,000,000 in state bonds to be allocated to the counties for secondary road purposes—if approved by the voters the state tax on gasoline would be increased from 6 cents to 7 cents per gallon; (2) $25,000,000 in state bonds to be allocated to the counties on the basis of average daily school membership to aid in the construction or repair of school buildings. The voters approved both bond issues on June 4. The legislature appropriated the current surplus, the $31,000,000 postwar reserve fund and $6,000,000 more than the estimated revenue during the biennium. It was hoped that a decline in building costs would produce enough savings from the permanent improvement appropriations to balance the general fund budget. The legislature also authorized the issue of $7,500,000 in bonds for the construction and improvement of North Carolina seaports and made the state a party to the compact of southern states for the development and maintenance of regional educational services in the south in professional, technological, scientific, literary and other fields.

State officers in 1949 were W. Kerr Scott, governor; H. P. Taylor, lieutenant governor; Thad Eure, secretary of state; Henry L. Bridges, auditor; Brandon P. Hodges, treasurer; Clyde A. Erwin, superintendent of public instruction; Harry McMullan, attorney general; W. P. Stacy, chief justice.

Education.—In 1947–48 there were 3,158 public elementary schools with 19,756 teachers and principals and 691,420 enrolled pupils, and 962 public high schools with 6,862 teachers and principals and 164,432 enrolled pupils; these schools were operated at a cost of $84,255,969, including $9,013,104 of federal funds. About three-fourths of the operating cost, excluding federal funds, was contributed by the state government. The average daily attendance in the public schools was 751,108; the number of inhabitants of school age 1,074,821. Not including principals or vocational teachers, the average salary for elementary teachers was $2,000 and for high school teachers $2,029.

Social Insurance and Assistance, Public Welfare and Related Programs.—In Oct. 1949 public grants amounting to $1,234,798 were made to 56,914 persons for old-age assistance; $541,257 to 12,868 families for aid to dependent children; $119,084 to 3,782 blind persons; and $56,088 for general relief in 3,847 cases. During the year ending June 30, 1949, the total amount of public relief funds distributed was $18,866,503 and during the first 11 months of 1949 unemployment benefits amounted to $18,010,265. In 1949 the state maintained ten charitable institutions with 10,808 inmates on Oct. 1; five correctional institutions with 699 inmates; and state highway prison camps with 8,613 prisoners.

Communications.—In 1949 the state highway and public works commission maintained 10,351 mi. of rural state highways, of which 9,526 mi. were hard-surfaced; and 51,031 mi. of rural county roads of which 5,109 mi. were hard-surfaced. There were 4,598 mi. of railroads in 1945 and 324 mi. of city bus routes, 10,277 mi. of passenger bus routes and 11,525 mi. of freight vehicle routes in 1944. There were 343,184 telephones in use in the state in 1947.

anking and Finance.—On June 30, 1949, there were 61 national banks branches with assets of $461,199,000 and 348 state banks and nches with deposits of $1,140,554,731 and assets of $1,248,875,949. January 1, 1949, there were 149 building and loan associations operat- under state charters with 168,733 shareholders and total assets of 2,178,109 and 27 federal savings and loan associations with total ets of $88,773,605. In 1948–49 state receipts were $629,188,636; oursements $573,357,494. On June 30, 1949, the state gross bonded t was $72,709,500 less $65,507,895 of bonds invested in sinking ds. The assessed value of property was $3,705,712,198 in 1948. In state general fund there was a cash surplus of approximately $13,- ,000 at the end of 1949.

griculture.—The acreage planted to cash crops in 1949 was larger n in 1948 but the total value of production was about $83,000,000 . The chief declines in production were in tobacco, cotton and pea- s. There were notable increases in corn, oats, soybeans and lespedeza d. The total value of agricultural production harvested from about 44,000 ac. in 1949 was approximately $664,945,000, of which tobacco ounted for $359,378,000 and cotton $66,930,000. The cash income of rth Carolina farmers in 1948 was $638,428,000 from crops; $153,- 5,000 from livestock and livestock products; and $7,905,000 from ernment payments. The value of the lands and buildings on the 7,412 farms in 1945, 42.6% of which were operated by tenants, s $1,002,983,012.

Table I.—*Leading Agricultural Products of North Carolina*

Crop	1949	1948	Average 1938–47
acco, lb.	745,120,000	756,684,000	$685,066,000
on, bales	460,000	678,000	549,000
n, bu.	75,565,000	69,006,000	53,124,000
e hay, tons	1,395,000	1,289,000	1,201,000
nuts, lb.	236,000,000	346,625,000	305,596,000
eat, bu.	5,785,000	6,045,000	6,805,000
et potatoes, bu.	5,876,000	5,635,000	7,714,000
potatoes, bu.	7,869,000	10,430,000	9,128,000
s, bu.	11,100,000	7,965,000	8,266,000
beans, bu.	3,960,000	3,564,000	2,505,000
edeza seed, lb.	42,900,000	34,500,000	31,785,000
ches, bu.	1,428,000	1,646,000	2,220,000
les, bu.	448,000	976,000	958,000
ans, lb.	2,924,000	2,752,000	2,507,000

Manufacturing.—In 1947 manufacturing establishments numbering 22 employed 350,207 wage earners at wages of $641,966,000 and ded value by manufacture $1,646,673,000. Value added by 939 estab- ments in textiles was $846,280,000; by 69 establishments in tobacco 57,986,000; and by 372 establishments in furniture and fixtures $102,- 7,000. Estimated industrial production in 1948 was $3,091,000,000 d electric power production was 9,353,600,000 kw.hr.

Table II.—*Principal Mineral Products of North Carolina*

Mineral	Value, 1947	Value, 1946	Value, 1945	Value, 1944
ne	$7,561,167	$6,835,448	$3,044,135	$5,975,951
y products	8,314,976	6,241,000	3,471,219	2,700,000
d and gravel	2,956,800	2,933,711	1,517,203	1,405,917
dspar	1,081,514	1,200,638	863,740	778,007
a	928,361	1,023,406	952,392	2,280,910
c and pyrophyllite	1,186,463	—	—	—

Mineral Production.—The mineral production for North Carolina in 47 was $23,699,000. (A. R. N.)

orth Dakota. A west north central state of the United States, North Dakota was admitted to the ion Nov. 2, 1889. Popular name, "Flickertail state." Land ea, 70,054 sq.mi.; water area, 611 sq.mi. Population (1940) 1,935; rural 510,012; urban 131,923. Capital, Bismarck 5,496). Chief cities, Fargo (32,580); Grand Forks (20,228); d Minot (16,577). The bureau of the census estimated the pulation July 1, 1949, as 605,000.

The elected state officers in 1949–50 were: governor, Fred G. ndahl; lieutenant governor, C. P. Dahl; secretary of state, omas Hall; auditor, Berta E. Baker; treasurer, Albert Jacob- n; attorney general, Wallace Warner; superintendent of pub- instruction, G. B. Nordrum; commissioner of insurance, Otto rueger; commissioner of agriculture and labour, Math Dahl; x commissioner, John Gray.

History.—The Garrison dam, Missouri-Souris irrigation proj- t, and new enlarged plant for lignite research at the Univer- y of North Dakota at Grand Forks were expected to improve preciably the development of the natural resources and popu- tion of the state. Federal agencies were spending for that rpose a total of more than $21,000,000, $27,000,000 and 5,000,000 in the years ended June 30, 1948, 1949 and 1950, spectively. A tax levy of one mill for a state medical centre be located at the university was voted at the Nov. 1948 election by a majority of 22,000 out of 183,000 votes cast. That levy was expected to provide a basic fund of more than $400,000 per year.

Education.—School teaching positions for the year ended June 30, 1948, were 6,388 (elementary 4,862; high school 1526); enrolment 112,629 (elementary 85,620; high school 27,009); buildings, one-room and two-room, 2,677; graded elementary 241; combinations (elementary and high school) 382; high school 28; schools in session (1948–49) 3,328. Total enrolment, fall of 1949, in the state university, the state agricultural college, other state institutions of higher learning and two municipal junior colleges was 8,377 full-time and 724 part-time students; faculty, 586.

Social Insurance and Assistance, Public Welfare and Related Programs.—Public assistance in the year to June 30, 1949, was $7,330,868; contributed by federal agencies 41.9%; state 35.4%; county 22.7%. Types of aid: old age $4,522,022, with an average of 8,704 persons aided per month; care of dependent and foster home children $2,004,253, with 2,019 persons; blind $62,972, with 118 persons; general assistance $741,621, with 1,340 persons; welfare service $234,542; and administrative expense, $629,698. Cost of operating 4 charitable and 4 correctional institutions, biennium to June 30, 1951, $4,806,788. Number of patients as of Dec. 1, 1949, was: feeble-minded 1,034; blind 33; deaf 85; tubercular 270; state hospital 2,099; correctional institutions, penitentiary 237; training school 248; state farm 54. Additional appropriations for improvements, repairs, new buildings and equipment, biennium ending June, 30, 1951, $1,226,620.

Communications.—Highway mileage, state 6,891.5; rural 107,630.9; spent for construction of state highways, year ended June 30, 1949, was $9,883,871.76 including $5,190,498.46 of federal funds; spent for maintenance of state highways $4,716,894.27, and for operation $372,521.02. Additional amounts appropriated to counties were: motor fuel taxes $1,281,492.43; motor vehicle licence fees $2,121,124.27; and federal monies for county feeder roads $686,284.03. Railway mileage, 5,272.

Banking and Finance.—On June 30, 1949, the Bank of North Dakota and 108 state banks had resources of $361,123,999.24; deposits $341,-794,454.07. Resources of 41 national banks (4 with trust powers) $263,429,700; deposits, $249,874,000. On Dec. 31, 1948, 5 federal savings and loan associations had resources of $11,064,754; and 10 state building and loan associations had resources of $25,280,824.46 and share capital of $23,060,860.87. Sixty-one state chartered credit unions had resources of $4,019,030.78 and share capital of $3,810,991.52. State treasury collections, year to June 30, 1949, were $101,542,160.61; payments $64,270,165.30; and bonded debt $45,541,250 including the soldier bonus of $27,000,000.

Agriculture.—The 1949 acreage in farm crops was 20,482,000, divided into 69,000 farms. North Dakota ranked fifth among the states in the total land area harvested. The ten-year average in crops (1938–47) was 19,000,000 ac. Gross farm income in 1949 was estimated at $498,000,000 or 69% as much as in 1948. Livestock and it products made a cash income of $170,000,000 or 87% of the previous year's income; crops made $305,000,000 or 62.5% of the 1948 figure. Over-all production of corn, wheat, oats, barley and rye was 31% less in 1949 than in 1948 and 24% below the ten-year average (1938–47).

Leading Agricultural Products of North Dakota

Crop	1949	1948	Average 1938–47
Spring wheat (other than durum), bu.	77,427,000	100,876,000	96,591,000
Durum wheat, bu.	34,012,000	40,082,000	30,813,000
Corn, bu.	23,361,000	29,380,000	24,157,000
Oats, bu.	36,550,000	60,256,000	61,270,000
Barley, bu.	26,608,000	55,440,000	45,423,000
Rye, bu.	2,748,000	4,812,000	6,546,000
Flaxseed, bu.	13,155,000	16,390,000	7,103,000
Potatoes, bu.	18,530,000	20,000,000	17,787,000
Hay, tons	2,818,000	2,962,000	2,991,000

Production of creamery butter totalled 44,999,000 lb. in 1948, a drop of 9% from 1947. The five-year average (1942–46) was 57,230,000 lb.

Manufacturing.—The estimated number of employees in nonagricultural establishments in North Dakota as of June 1949 was 130,699, an increase of 26% over 1940. In manufacturing there were 6,010 employees, an increase of 20% over 1940. The estimated annual wage per worker in manufacturing was $2,650 in establishments of 8 or more.

Mineral Production.—Production of lignite coal for the year ended June 30, 1949, was 2,970,300 tons; value $6,984,272.42; employment 403 miners, 258 others. New mines 9; reopened 3; number of mines in operation in the year to June 30, 1949, was 93; natural gas from 19 wells, 11 months to Nov. 30, 1949, was 339,908,000 cu.ft.; yield from 25 wells, calendar year 1948, was 642,687,000 cu.ft. (A. V. O.)

Northern Ireland: *see* IRELAND, NORTHERN.
Northern Rhodesia: *see* RHODESIA, NORTHERN.

Northwest Territories. The Northwest Territories comprise the mainland portion of Canada lying north of the 60th parallel of latitude between Hudson bay on the east and Yukon territory on the west, together with the islands lying between the mainland of Canada and the north pole, including those in James bay, Hudson bay and Hudson strait. Area, 1,304,903 sq.mi.; pop. (1941 census) 12,028, including 2,284 whites, 4,334 Indians and 5,404 Eskimos; estimated pop. (May 1949) 15,876.

For purposes of organization and administration, the territories were divided into the provisional districts of Mackenzie (527,490 sq.mi.), Keewatin (228,160 sq.mi.) and Franklin (549,253 sq.mi.), by order in council dated March 16, 1918. The Northwest Territories act (1927) provided for a territorial government composed of a commissioner, a deputy commissioner and five councillors appointed by the governor in council. The seat of government is at Ottawa. In 1949, the Northwest Territories council was composed as follows: commissioner, Hugh L. Keenleyside; deputy commissioner, Roy A. Gibson; members of council, Louis de la C. Audette, Harold B. Godwin, Donald M. MacKay, John G. McNiven, Stuart T. Wood; secretary, James G. Wright.

Education.—The education of white, native and half-breed children in the Northwest Territories was carried on during 1949 at day and residential schools operated by the Church of England and Roman Catholic missions with financial assistance from the dominion government, at government day schools operated by the Northwest Territories administration and at Indian schools operated by the Indian affairs branch of the department of mines and resources. The Northwest Territories administration erected public schools at Fort Smith and Yellowknife and operated schools at Port Brabant and Port Radium. The administration also had under construction day schools at Aklavik, Fort Simpson, Fort Resolution, Coppermine, Coral Harbour on Southampton Island and Fort Chimo, Que., and was establishing schools in conjunction with government nursing stations at Port Harrison, Que., and Lake Harbour on Baffin Island. The last five schools are located in Eskimo territory. The Indian affairs branch operated schools at Hay River, Rae and Fort McPherson, and had schools under construction at Fort Norman, Rocher River, Arctic Red River, Fort Good Hope and Fort Franklin. The School of Opportunity established at Yellowknife provided secondary education for students in the Northwest Territories. In addition, scholarships were offered by the Northwest Territories administration to assist in financing worthy students of the territories who wished to pursue advanced studies at universities in other parts of Canada.

Public Services and Welfare.—During 1949, 12 hospitals were operated in the Northwest Territories. Nine of these were maintained by the missions, one by a mining company at Port Radium, one by private enterprise at Norman Wells and one by the local administrative district at Yellowknife.

The payment of family allowances in the Northwest Territories contributed greatly to the welfare of the natives in periods of stress. In addition, in districts where the native economy was disturbed by a scarcity of game, the government issued supplies to the natives through the Royal Canadian mounted police, who are the local representatives of the administration.

When game was available, hunters were not relieved of the obligation of providing for their families.

Transportation and Communication.—The Mackenzie district and western arctic are served by water and aerial transportation. The new all-weather Mackenzie highway from Grimshaw, Alta., to Hay River settlement on Great Slave lake, which was opened in 1948, was used extensively during 1949. Regular mail, passenger and express services were maintained by air throughout the year to many points in Mackenzie district. In 1949 the annual Eastern Arctic patrol, which carries new personnel as well as mail and the year's supplies to Royal Canadian mounted police detachments, medical centres, radio and weather stations, trading posts, missions and schools, was carried out by a number of small vessels engaged by the government. A new phase of the patrol introduced in 1949 was the inspection of conditions in a number of districts by air. Spring and summer flights, carrying an officer of the Northwest Territories administration and medical personnel, covered both sides of Hudson bay and parts of Baffin Island.

Radio communication between important settlements and trading posts in the territories and outside points was maintained through government and private radio stations.

Agriculture and Fisheries.—Limited agricultural and horticultural operations were carried on in 1949 at most of the settlements in Mackenzie district. Experimental substations operated by the department of agriculture carried on field work during the year. Commercial fishing on Great Slave lake, inaugurated in 1945, produced a catch of 2,019,700 lb. during the summer of 1948, and 4,089,857 lb. during the winter of 1948–49, principally whitefish and lake trout.

Fur Trade.—Fur production in the territories during the year ended June 30, 1948 (latest complete figures available), was valued at $1,872,302, with a total of 482,420 pelts taken during that period. Trapping continued to be the chief occupation of the native population, and was strictly controlled by regulation. Reindeer herding in the Mackenzie delta region was continued.

Production and Industry.—Mineral production in the Northwest Territories for the year 1948 was valued at $4,298,089, of which gold accounted for $3,449,355.

The new hydroelectric power development on Snare river, 94 mi. northwest of Yellowknife, which was officially opened in 1948, assisted in the development of the mining industry during 1949. Tentative estimates indicated that available water-power resources of the Northwest Territories totalled about 280,000 h.p. available under conditions of ordinary minimum flow with almost 690,000 h.p. available for six months of the year.

Crude oil production was continued by Imperial Oil, Limited, at Norman Wells on the Mackenzie river. After being processed at the Norman Wells refinery the oil was shipped to Yellowknife and other points in the territories. (R. A. G.)

Norway. A democratic monarchy of northern Europe, Norway is bounded north by the Arctic ocean, east by Finland, the U.S.S.R. and Sweden and west by the North sea. Area 125,193 sq.mi.; pop. (Dec. 3, 1946, census, prelim. figs.) 3,123,883; (1948 est.) 3,181,000. Capital, Oslo (1946: 289,000; 1948, after extension of city limits, about 420,000). Other principal cities with 1946 provisional figures are Bergen (108,933); Trondheim (56,444) and Stavanger (49,218). Religion, Lutheran Christian. Ruler in 1949: King Haakon VII. Prime minister: Einar Gerhardsen.

Spitsbergen (Svalbard), Norwegian since 1925, is an archipelago lying about midway between northern Norway and the north pole. Area 24,293 sq.mi. Population in 1949 was about 1,600 Norwegians and an estimated 2,350 Russians.

History.—Norway joined in the long but futile negotiations to build a Scandinavian defense pact. Basically the disagreement lay between Norway, desiring a Scandinavian group with ties also to Great Britain and the United States, and Sweden, desiring a united Scandinavia pledged to neutrality. Norway feared that a neutral bloc in the north would be as powerless in another war as was Norway alone in 1940.

When it became clear that no compromise could save the Scandinavian idea Norway decided quickly to investigate the terms of the North Atlantic treaty. At the end of March 1949 the *storting* voted 130–13 to send Foreign Minister Halvard Lange to Washington, D.C., to sign the document. Norway and Denmark went with the west; Sweden for the time at least maintained its neutral position. Later discussions attempted to find means of technical co-ordination between the northern countries, but made little progress.

Norway rejected a soviet invitation to sign a mutual nonaggression pact; the foreign minister asserted that Spitsbergen was part of Norway for defense purposes; military conversations with the British, the Danes and others indicated a careful co-ordination of defense endeavours.

The Marshall plan, or European Recovery program, was helping Norway to build up both imports and exports, total allotments in the 15-month period, April 1948 to June 1949, running to $101,100,000, including a loan of $35,000,000, a grant of $49,600,000 and conditional aid amounting to $16,500,000. (*See* also EUROPEAN RECOVERY PROGRAM.)

Imports still far exceeded exports, and the dollar balance was unfavourable. Nevertheless, the first eight months of 1949 showed larger exports ($312,000,000) and smaller imports ($400,000,000) than expected.

Televåg, the Norwegian Lidice, wiped out by the nazis in vengeance for the killing of two Germans, was completely reconstructed, an accomplishment facilitated by contributions from all Norway. The new iron and steel plant at Mo i Rana was making substantial progress. To attain these feats of reconstruction it was necessary to hold down the consumers' standard of living in a severe austerity program. The aim of the government was to reinvest one-third of the total national income in productive enterprise.

The devaluation of the krone, forced on Norway by the British action of Sept. 18, was hard for the country to accept. The blow was lessened by the fact that Sweden, and most other countries where Norway had orders for ships and goods, also devalued. But Norway could not increase its exports significantly, for its productive apparatus was already at 150% of prewar capacity. Its ships had to carry for nondollar lands and Norway could see only additional hardship in the new exchange rate. Its trade with England was so important that it had no choice but to accept the situation.

The October elections hinged on reconstruction and financial policies, and it was expected the government would have diffi-

ORWEGIAN SKI PATROL on the Russo-Norwegian border near Kirkenes in
e arctic in 1949. Across the lines, soviet border forces were reported to be
avily armed, in marked contrast with this token Norwegian detachment

lty maintaining its one-vote majority in the *storting*. The
mber of voters was increased by the lowering of the age from
to 21. When the returns were in the Social Democrats were
ven a nine-member increase, and the Communists were
minated.

The Communists attacked the government's foreign policy as
ell as its internal policy, but lost out even in the far north
here lay their supposed strength. Actually their loss in popular
te was about 50% (considering the increased number of
ters). After the election the inner split within the party was
cognized; Peder Furubotn, general secretary, and half the
embership in the party's general council were expelled as Tito-
s, though all had been regarded as Moscow men. (F. D. S.)

Education.—Schools (1946): elementary 5,626, pupils 289,449, teachers
,766; secondary 288, pupils 44,356, teachers 3,090. Technical schools
947): day 9, pupils 1,823, teachers 233; apprentice 84, pupils 8,481,
chers 940; workshop 144, pupils 2,810, teachers 330. Two universities
d eight institutions of higher education (1948): students 7,743, pro-
ssors and lecturers 730.

Finance and Banking.—Budget: (1948–49) revenue kr. 2,782,000,000,
penditure kr. 2,610,000,000; (1949–50 est.) revenue kr. 2,584,000,000,
penditure kr. 2,320,000,000. National debt (Jan. 1949): kr. 6,090,-
o,000. Currency circulation (June 1949): kr. 2,116,000,000. Gold
erve (June 1949): $53,000,000. Savings and bank deposits (June
49) kr. 8,728,000,000. Cost of living index, mid-1949, 163 (1938=
o). The monetary unit is the krone (pl. kroner). Exchange rate (Sept.
, 1949) kr. 4.96=$1 U.S.; (Dec. 15, 1949) kr. 7.15=$1 U.S.

Foreign Trade.—(1948): Imports kr. 3,721,000,000; exports kr. 2,063,-
o,000.

Transport and Communications.—Roads (June 30, 1949): 44,247 km.
censed motor vehicles (Jan. 1948): cars 62,578; trucks 46,396. Rail-
ys (June 30, 1948): state 4,474 km., private 83 km. Shipping (Jan.
49): merchant vessels 5,136 (above 25 gross tons) totalling 4,680,000
s. Telephone subscribers (June 30, 1948) 400,200. Radio receiving
licenses (Oct. 1, 1949) 709,116.

Agriculture and Fisheries.—Main crops (metric tons, 1948): wheat
,000; barley 89,200; oats 177,100; rye 3,000; potatoes 1,454,000.
vestock (June 20, 1948): cattle 1,175,000; sheep 1,629,000; pigs
8,000; horses 206,000; poultry 4,663,000. Fisheries (1948): total
ch 1,300,000 metric tons, worth kr. 325,000,000.

Industry.—Industrial establishments (1947) 5,785, employing 186,774
nual and 28,942 salaried workers. Fuel and power: coal (1948):
5,000 metric tons; gas 46,944,000 cu.m.; electricity 12,445,000,000
.hr. Raw materials (metric tons 1948): pig iron 63,331; pyrites 735,422; ferrosilicon (calculated 45% basis) 43,991; other ferroalloys 94,862; aluminum 30,157; nickel 8,401; zinc 42,000; sulphur 78,479; mechanical wood pulp for sale (wet basis) 562,129; chemical wood pulp (dry basis) 390,219. Other products (1947): nitrate of lime 473,098 metric tons; herring oil 243,433 hl.; paper, pasteboard and cardboard 455,681 metric tons; canned fish and fish products 48,801 metric tons.

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(E. J. L.)

Nose: *see* EAR, NOSE AND THROAT, DISEASES OF.

Nova Scotia. Second smallest of the maritime provinces of Canada, Nova Scotia entered the confederation in 1867; area: 21,428 sq.mi.; pop.: (1941) 577,962, (1949 est.) 645,000; capital; Halifax, pop. (1943) 126,480; other cities are Sydney (1941) 28,305, and Glace Bay 25,147.

History.—The Liberal government was returned to power for the fifth election in succession in June 1949.

The government's 1949 budget was for $33,975,361 of expenditures, which was 20% above the record high budget of 1948. More money was spent on highways, public works, agricultural development, education, welfare, health, labour and development of natural resources. Despite the increased outlays, 1949 revenues ran at a surplus rate, estimated at about $500,000, which was added to previous surpluses and used for long-term low-interest loans for industrial expansion (about $3,000,000 was so used in 1949), for municipal capital projects and for debt reduction.

Education.—During 1949 the council of public instruction was replaced by a provincial department and minister of education. The latest revised statistics available were the following for 1946 provincially controlled schools: total enrolment 120,655; average daily attendance 99,367; teachers 3,706; total revenue $6,665,248.

Agriculture.—The federal government made an agreement with British food authorities, in which the latter agreed to take $1,600,000 worth of apples with the federal government paying half the bill. That sold only about a third of the 1949 crop of 1,200,000 bbl. (1948: 1,000,000 bbl.; 1947: 1,500,000 bbl.). Although for the first time egg production exceeded consumption, and hog raising became an annual million-dollar business, the province was spending $4,000,000 annually for non-Nova

Scotian agricultural foods. To help reduce this bill, the provincial government entered into a $9,000,000 agreement with the federal government for marshland reclamation running to 45,000 productive acres.

Labour and Industry.—The 1949 session of the legislature: (1) renewed the labour act which gave preference in employment to residents of the province; (2) increased workmen's compensation benefits; (3) increased from 2,000 to 4,000 hrs. the minimum time for an apprenticeship contract. Employment stood at 111.7 in Sept. 1949, compared with 118.4 in Sept. 1948 (index of June 1, 1941: 100); average weekly wages were $37.99 for Sept. 1949 and $36.72 for Sept. 1948.

Production of coal in 1948, through increasing mechanization, had risen to 6,412,000 tons compared with 4,045,237 tons for 1947.

In 1948 a total of 323,203 tourists brought $27,717,888 into the province.

FILMS OF 1949.—*The Acadians* (National Film Board of Canada).

(C. CY.)

Nursing: *see* HOSPITALS.

Nutmegs: *see* SPICES.

Nutrition, Experimental.

A clear illustration of the experimental production of hypertension (high blood pressure) and its relation to nutrition was given in 1949 by W. S. Hartroft and C. H. Best of Toronto, Can. These investigators placed weanling albino rats on a diet low in choline, a member of the vitamin B complex, for periods of five or six days. Such brief periods of choline deficiency were sufficient to produce the typical "haemorrhagic kidney" in the young growing albino rat. In some of the experiments the rats received the ration for four five-day intervals, separated by two-day periods during which the basal diet was supplemented with choline chloride. The animals were then transferred to a stock diet and observed for periods of from three to seven months; control animals were included in the study. Blood pressure determinations were made at intervals, and at the end of the experiment, histologic studies were made of both kidneys. The amount of kidney damage observed was classified as severe, moderate, slight or none. Ten of the survivors of the haemorrhagic kidney syndrome exhibited severe persistent kidney damage. All of these animals had definite arterial hypertension, the average blood pressure being 195 mm. of mercury.

Thirteen of the survivors showed moderate residual kidney damage, with mean blood pressure of 165 mm. There were 39 of the survivors who showed only slight kidney damage and exhibited a mean blood pressure of 136 mm. For the 36 control animals, the mean blood pressure was 118 mm. For production of the hypertensive syndrome, the authors emphasized the necessity of permitting growth to occur subsequent to the time of production of the acute kidney lesions.

The explanation of the probable mechanism of this experimental hypertension seemed to lie in the nature of the observed kidney changes. Despite the conservative view of these workers as to immediate clinical application of their findings, the studies were important because they provided another tool for production of experimental hypertension.

The general use of X-ray therapy in cancer, and the possible use of atom bombs in warfare, served to increase interest in the mechanism by which radiation sickness is produced and in its treatment. In a study of agents which influence experimental radiation injury, A. Goldfeder, L. Cohen, C. Miller and M. Singer investigated the effects of dietary supplements of folic acid and of pyridoxine on the susceptibility of mice to radiation injury. These two vitamins were selected for investigation because the former was reported to be of clinical value in preventing nausea in X-ray-treated cases, whereas the latter had been of value in sprue and in treatment of leukopenia, which suggested its application in relief of the diarrhoea and leukopenia accompanying radiation sickness. The experimental studies with mice indicated that deficiencies of these two B-complex vitamins markedly increased susceptibility to irradiation injury.

Other studies in experimental nutrition related to radiation sickness dealt with nutrients in relation to haemorrhage, as excessive bleeding is a part of severe radiation injury. Dietary factors were demonstrated to be important in maintaining the integrity of the walls of blood vessels. Among materials apparently influencing capillary permeability were flavones or the group of vitamin P substances. It was claimed that naturally occurring flavones protect animals against the effects of irradiation. This was ascribed to protection afforded against capillary damage. J. B. Field and P. E. Rekers described observations concerning the activity of flavones and related substances in irradiated dogs; the effects were compared with those of ascorbic acid, another vitamin, which has a role in permeability. Many flavones were studied and some of them gave considerable protection from the haemorrhage of radiation.

Of increasing importance in experimental nutrition was the search for substances which inhibit the action of an essential nutrient such as a vitamin. Such substances generally have a chemical structure similar to the essential nutrient. This type of investigation had become important in the infectious diseases because if the action of a nutrient necessary for the growth of the infecting agent can be inhibited, then the infecting agent can be prevented from multiplying and the body can usually overcome the infection. This field of experimental nutrition was being applied in 1949 to the study of cancer in the hope of finding a substance which would inhibit a nutrient necessary for the growth of cancer tissue and hence inhibit the growth and spread of the cancer. Encouragement along these lines was provided by the findings of G. W. Kidder, Virginia C. Dewey, R. E. Parks, Jr., and G. L. Woodside. They found that a chemical substance known as guanazolo markedly inhibited experimental tumours in mice as well as naturally occurring mammary cancer in mice.

The report of Kidder and co-workers aroused much interest in centres of cancer therapy. It was pointed out that the tumours are only arrested and not killed and that they resume growth upon withdrawal of the growth inhibitor. The results illustrated the contributions that experimental nutrition could be expected to make in medical fields. (*See* also VITAMINS.)

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(F. J. SE.)

Nuts.

The estimated U.S. 1949 pecan crop of 113,694,000 lb. was near the 1938–47 average of 110,620,000 lb., but only two-thirds as much as the record 177,667,000-lb. 1948 crop. Production of improved varieties (about two-fifths of the total) was only half as much as in 1948. The leading states were Texas (29,000,000 lb.), Oklahoma (20,000,000 lb.), Georgia (17,000,000 lb.), Alabama (13,780,000 lb.) and Louisiana (13,640,000 lb.). Quality was good, particularly in the eastern area which produces most of the improved varieties.

Walnut production, mostly in California but partly in Oregon, reached a record 85,500 tons, compared with 71,100 tons in 1948 and an average for 1938–47 of 64,280 tons. The walnut crop of the Mediterranean basin was estimated at 65,800 tons compared with 49,900 tons in 1948.

California almond production was estimated at 39,000 tons, a record crop 15% larger than the 1948 crop and about twice as large as the 10-year average. Almond production of the Mediterranean basin in 1949 was estimated at 61,400 tons, compared with 54,000 tons in 1948 and 77,500 tons in 1947. Harvests in Italy and Portugal were better than anticipated earlier.

Filbert production in Oregon and Washington was estimated

: 11,240 tons, a new record, compared with the 1947 record rop of 8,800 tons and an average of 5,568 tons for 1938–47.

Nut prices in 1949, compared with 1948, were 10% to 20% wer for almonds, filberts and walnuts, and about 50% higher or pecans. (*See* also PEANUTS.) (J. K. R.)

yasaland. A British protectorate in central Africa. Area: 47,949 sq.mi. Pop. (1948 est.): *c.* 2,150,000. apital: Zomba. Governor in 1949: Sir Geoffrey Colby.

History.—Membership of the legislative council was increased uring 1949 from 13 to 19 by the addition of three official and aree (two African and one Indian) unofficial members, thus or the first time providing non-European representation on the ouncil. Severe drought necessitated the introduction of large-cale precautions against famine; emergency food imports were :ranged and an African Foodstuffs commission was established control supplies. (*See* also RHODESIA, NORTHERN.)

Finance and Trade.—Budget (1949 est.): revenue £2,734,033; expendi-re £3,160,487. Foreign trade (1948): imports £4,340,468; exports ,212,424. Principal exports: tobacco, tea and cotton. (JO. A. HN.)

ylon: *see* RAYON AND OTHER SYNTHETIC FIBRES.

ats. The U.S. oat crop in 1949 of 1,322,924,000 bu. was 11% less than the 1948 crop but 7% above the 10-year aver-ge. An early spring favoured seeding of the crop on a slightly rger acreage than in 1948. However, a dry May and June in ne main area plus heat and disease damage reduced the yield 5 bu. per acre below the 1948 record, in spite of widespread se of improved varieties. As in most years, Iowa (238,222,000 u.), Minnesota (178,272,000 bu.), Illinois (168,990,000 bu.) nd Wisconsin (119,884,000 bu.) led in production, with 53% f the 1949 total.

U.S. Oat Crops

	1949	1948	1947	Average 1938–47
tal production (thousands of bushels)	1,322,924	1,493,304	1,199,422	1,234,082
reage harvested (thousands) . . .	40,560	40,198	38,451	38,347
elds (bushels per acre)	32.6	37.1	31.2	32.1

Oat prices during 1949 were substantially below those of 1948, eclining from $0.76 national average to the farmer early in the ear to a low of about $0.58 at harvest time, then recovering oderately. The government price-support loan averaged $0.70 er bu. at the farm. That, plus a record carryover of 295,000,-o0 bu. from the previous crop did much to stabilize prices. : was anticipated that the acreage devoted to this crop in 1950 night be substantially increased as a result of government pro-rams for acreage reduction of corn, wheat and possibly other rops.

The estimated 1949 world oat crop of 3,980,000,000 bu. was ubstantially below the 4,200,000,000 bu. crop of 1948 and the rewar average. The European crop of 1,375,000,000 bu. was rger than in 1948, whereas Canada's crop of 316,558,000 bu. ompared with 358,807,000 bu. in 1948. (J. K. R.)

bituaries. The following is a selected list of prominent men and women, of the United States and other ountries, who died during the year 1949.

aunza, Gustavo, Nicaraguan journalist and soldier (b. Masaya, Nic., Feb. 27, 1875—d. Leon, Nic., Nov. 25, 1949).

e, Isoh, Japanese sportsman and Socialist leader (b. Fukuoka prefecture, Jap., Feb. 4, 1865—d. Tokyo, Jap., Feb. 10, 1949).

dams, James Truslow, U.S. historian (b. Brooklyn, N.Y., Oct. 18, 1878—d. Southport, Conn., May 18, 1949), received his bachelor's degree at Brooklyn Polytechnic institute in 1898 and an M.A. at Yale university, New Haven, Conn., in 1900. He entered business and in a few years was a partner in a New York stock exchange firm. He retired from his career as a successful broker and banker in 1912 and began in 1916 his career as a historian. Commissioned by Col. E. M. House to prepare data for the World War I peace conference, he became absorbed in U.S. history, and in 1922 he won the Pulitzer prize for *The Founding of New England. The Adams Family* was a Literary Guild selection of 1930; *The Epic of America* was a best-seller of 1932; and *The March of Democracy* was a later best-seller. He also supervised the publication of such works as *The Album of American History, The Atlas of American History* and *The Dictionary of American History.*

Adler, Emanuel Philip, U.S. newspaper editor (b. Chicago, Ill., Sept. 30, 1872—d. Davenport, Ia., March 2, 1949).

Adler, Jankel, Polish-born artist (b. Lodz, Pol., July 25, 1895—d. London, Eng., April 26, 1949).

Ahnelt, William Paul, German-born publisher (b. Berlin, Ger., 1864?—d. Keyport, N.J., Oct. 5, 1949).

Aitken, Robert Ingersoll, U.S. sculptor (b. San Francisco, Calif., May 8, 1878—d. New York, N.Y., Jan. 3, 1949), studied at the Mark Hopkins Institute of Art of the University of California in San Francisco, and later was professor of sculpture there. He subsequently taught at the National Academy of Design school, New York, N.Y., and the Art Students League of New York. Among his many prominent works were the west pediment of the U.S. supreme court building in Washington, D.C.; frieze on the Gallery of Fine Arts in Columbus, O.; a monument to President William McKinley at St. Helena, Calif.; the George Rogers Clark monument at the University of Virginia, and busts of Thomas Jefferson, Daniel Webster, Benjamin Franklin and Henry Clay in the Hall of Fame in New York. He also designed the $50 gold coin issued by the government to commemorate the Panama-Pacific exposition.

Alba, Santiago, Spanish political leader (b. Valladolid, Sp., 1872?—d. San Sebastian, Sp., April 7, 1949).

Alexander, Douglas, English-born manufacturing executive (b. Halifax, Yorks., Eng., July 4, 1864—d. Stamford, Conn., May 22, 1949).

Alexander, Ronald Okeden, Canadian army officer (b. Kandy, Ceylon, Aug. 7, 1888—d. Victoria, B.C., July 27, 1949).

Allen, (William) Hervey, U.S. author (b. Pittsburgh, Pa., Dec. 8, 1889—d. Miami, Fla., Dec. 28, 1949), attended public and college preparatory schools in Pittsburgh, then entered the U.S. Naval academy at Annapolis, Md., from which he was honorably discharged after an athletic injury. He taught English at high schools in South Carolina, then lectured at Columbia university, New York City, and at Vassar, Poughkeepsie, N.Y. He began writing his most memorable work, *Anthony Adverse,* in Bermuda in 1932 and completed it a year later. The 1,000-page, 500,000-word book launched a trend toward historical romances, and was so popular it was translated into 18 foreign languages. Allen was also the author of a number of other volumes including *Israfel,* a biography of Edgar Allan Poe; *Action at Aquila;* and *The Forest and the Fort.* He was editor of the *Rivers of America* series after 1943.

Alling, Paul Humiston, U.S. diplomatic official (b. Hamden, Conn., July 15, 1896—d. Bethesda, Md., Jan. 18, 1949).

Amigo, Peter Emmanuel, British Roman Catholic archbishop (b. Gibraltar, May 26, 1864—d. Southwark, London, Eng., Oct. 1, 1949).

Anderson, Ivy, U.S. blues singer (b. Gilroy, Calif., 1904—d. Los Angeles, Calif., Dec. 28, 1949).

Andrews, Walter Gresham, U.S. congressman (b. Evanston, Ill., July 16, 1889—d. Daytona Beach, Fla., March 5, 1949), served in the national house of representatives from the Buffalo, N.Y., area for 18 years. A graduate of Princeton university, he served in World War I, becoming a major, and spent a decade in business in Buffalo before entering politics in 1930. After 1935 he was the ranking Republican member of the house military affairs committee, later the house armed services committee. As chairman of this committee he sponsored the compromise postwar draft bill, and worked for unification of the armed services.

Angell, James Rowland, U.S. educator (b. Burlington, Vt., May 8, 1869—d. Hamden, Conn., March 4, 1949), was the 14th president of Yale university. He was graduated in 1890 from the University of Michigan, Ann Arbor, Mich., did graduate work at Harvard, travelled and studied in Europe and in 1893 became instructor of philosophy at the University of Minnesota, Minneapolis, Minn. In 1894 he went to the University of Chicago, where he spent the next 25 years, becoming professor and head of the department of psychology, dean of the faculties and acting president of the university. In 1920 he became president of the Carnegie Corporation of New York, leaving that post in 1921 to become president of Yale, a position he held for 16 years.

On his retirement from Yale, Angell became educational consultant and public service counsellor of the National Broadcasting company, serving as general director of the NBC Inter-American University of the Air. He was the author of several texts, including *Psychology* (1908), *Chapters from Modern Psychology* (1911), *Introduction to Psychology* (1913) and *American Education* (1937). (*See* also *Encyclopædia Britannica.*)

Antin, Mary (MRS. A. W. GRABAU), Russian-born author (b. Polotzk, Russia, 1881—d. Suffern, N.Y., May 15, 1949).

Argyll, Niall Diarmid Campbell, 10TH DUKE OF, British peer (b. Feb. 16, 1872—d. Inveraray castle, Argyll, Scot., Aug. 20, 1949).

Armour, Bernard R., U.S. chemical manufacturing executive (b. 1891—d. New York city, Dec. 1, 1949).

Armstrong, Walter Preston, Sr., U.S. lawyer (b. Pittsboro, Miss., Oct. 26, 1884—d. Memphis, Tenn., July 27 1949).

Asafiev, Boris Vladimirovich, Russian composer (b. Leningrad [then St. Petersburg], Russia, July 29, 1884—d. Moscow?, U.S.S.R., Jan. 1949), studied under Nicolas Rimsky-Korsakov and Anatol Liadov. His first ballet was entitled *Flames of Paris,* taking its theme from the French revolution, and was a permanent success. His second, *The Fountain of Bakhtchisaray,* based on a story by Alexander Pushkin, was also a success.

During the German siege of Leningrad in World War II he composed the *Motherland Symphony.* In 1948 he was one of eight Russian composers to receive the Stalin prize of 100,000 roubles, which he won for his biography of

Michael Glinka, 19th century Russian composer.

As chairman of the Union of Soviet Composers, Asafiev headed an elite group of about 850 persons who enjoyed special privileges and high incomes. It was to this union that Sergei Prokofiev, Aram Khachaturian and Dmitri Shostakovich were required to apologize after they were accused of creating musical works that did not reflect the revolutionary spirit.

Ashbrook, Paul, U.S. etcher (b. New York city, Jan. 3, 1867—d. Mexico City, Mex., Aug. 22, 1949).

Atwood, Wallace Walter, U.S. geographer (b. Chicago, Ill., Oct. 1, 1872—d. Annisquam, Mass., July 24, 1949).

August Wilhelm, Prince of Hohenzollern (b. Jan. 29, 1887—d. Stuttgart, Ger., March 25, 1949), was the fourth son of Kaiser William II and the Empress Augusta Victoria. He was known in his youth as a democrat but in 1930 joined the nazi party, and outspokenly supported Hitler. He was arrested during the 1934 purge of the nazi party, but during World War II was again in favour with the nazis. He served as a colonel in the Imperial German army in World War I, and after the overthrow of the Hohenzollern dynasty became a bank clerk and later worked for an automobile concern. He was convicted as a war criminal by a German court in May 1948, and sentenced to serve two and one-half years in prison, but was released because he had been confined since the end of the war while awaiting trial.

Avezzana, Camillo Romano, Baron, Italian diplomat (b. 1868?—d. Eboli, It., June 16, 1949).

Avinoff, Andrey, Russian-born entomologist (b. Tulchin, Russia, Feb. 14, 1884—d. New York city, July 16, 1949).

Ayliff, Henry Kiell, British actor and theatrical producer (b. Grahamstown, U. of S.Af., 1871?—d. Cambridge, Eng., May 25, 1949).

Bailey, Margaret Emerson, U.S. author (b. Providence, R.I., 1886?—d. New Canaan, Conn., Oct. 28, 1949).

Baillie-Saunders, Margaret, British novelist (b. Scarborough, Yorks., Eng., 1873—d. St. Leonards-on-Sea, Sus., Eng., April 24, 1949).

Baker, Oliver Edwin, U.S. geographer (b. Tiffin, O., Sept. 10, 1883—d. Dec. 2, 1949).

Baldwin, Samuel Atkinson, U.S. organist and composer (b. Lake City, Minn., Jan. 25, 1862—d. New York city, Sept. 15, 1949).

Ball, Sydney Hobart, U.S. geologist (b. Chicago, Ill., Dec. 11, 1877—d. New York city, April 8, 1949).

Barazi, Muhsin, Syrian premier (d. Damascus, Syr., March 30, 1949).

Barnard, Joseph Edwin, British physician (b. London, Eng., 1870—d. Addiscombe, Sur., Eng., Oct. 25, 1949).

Barrows, Nat A., U.S. journalist and author (b. Rochester, Mass., 1905—d. near Bombay, India, July 12, 1949), began his career on the *Boston Globe*, gaining national renown from his series on the sinking and the rescue attempts involving the U.S. submarine "Squalus." This story he recounted in the book *Blow All Ballast* (1940). Transferring to the *Chicago Daily News* in 1941 he served as correspondent with U.S. forces in the Caribbean and in South America before moving to Europe to cover the reconquest of that continent by the Allies. His postwar assignments included the sessions of the United Nations, and he was cited in 1948 by Sigma Delta Chi, national journalism fraternity, for his series on the Russian air-supply line to Israel. He was killed, along with 12 other U.S. journalists, in the crash of a Dutch air liner in which they were returning from a survey of Indonesia.

Barry, Philip, U.S. playwright (b. Rochester, N.Y. June 18, 1896—d. New York city, Dec. 3, 1949), studied at Yale, spent a year as an attaché at the U.S. embassy in London, then completed his studies of dramatic writing under George P. Baker at Harvard, where he wrote his first play, *You and I*. His later plays included *The Youngest*, *In a Garden*, *White Wings*, *Paris Bound*, *Holiday*, *The Animal Kingdom*, *The Philadelphia Story*, *Without Love* and *Foolish Notion*. Among the stars who appeared in various Barry successes were Laurette Taylor, Madge Kennedy, Hope Williams, Katharine Hepburn and Tallulah Bankhead.

Bartlett, Alice Hunt (Mrs. William A. Bartlett), U.S. poet and editor (b. Bennington, Vt., July 31, 1870—d. New York city, Sept. 14, 1949).

Bartlett, Murray, U.S. educator (b. Poughkeepsie, N.Y., March 29, 1871—d. Canandaigua, N.Y., Nov. 13, 1949).

Bates, Henry Moore, U.S. legal scholar (b. Chicago, Ill., March 30, 1889—d. Berkeley, Calif., April 15, 1949).

Beach, Rex, U.S. author (b. Atwood, Mich., Sept. 1, 1877—d. Sebring, Fla., Dec. 7, 1949), studied at Rollins college, Winter Park, Fla., and in between trips to the Yukon, which he made famous in his novels, completed his law studies in Chicago. An outstanding athlete in his youth, he began writing in 1905, selling a short story to *McClure's Magazine*. His first novel, *The Spoilers*, a romance of the Yukon, appeared in 1906. Thereafter he wrote more than 30 novels, as well as many magazine articles and short stories. His fame as a chronicler of the Yukon itself helped to attract visitors to that territory. His action stories later were set in Panamá, the Texas oil fields and in Florida, where he himself had a large farm. Among his other novels were *The Silver Horde*, *Flowing Gold*, *The Ne'er-Do-Well*, *Rainbow's End*, *Alaskan Adventures* and *Jungle Gold*. He shot himself, presumably in despair because of an incurable cancer of the throat.

Beasley, John Albert, Australian government official (b. Werribee, Vict., Austr., Nov. 9, 1895—d. Sydney, N.S.W., Austr., Sept. 2, 1949), was educated at Werribee and worked for the Sydney city council electricity supply department for some years. He was an active trade unionist and for seven years from 1921 was president of the New South Wales Trades and Labour council. From 1928 until 1946 he sat in the federal house of representatives as member for west Sydney, and from 1929 to 1931 he was assistant minister for industry and external affairs in the government of J. H. Scullin. In 1940, while leader of the non-Communist Labour party, he was appointed to the advisory war council, and in the following year his party merged with the Labour party under John Curtin. When Curtin became prime minister in Oct. 1941, Beasley was made minister of supply and shipping. He was vice-president of the executive council from February to July 1945, and from July until December was minister of defense. He was then appointed minister resident in London, and in Aug. 1946 became high commissioner. He was made a privy councillor in 1946.

Beaubien, Joseph, Canadian industrialist and civic official (b. Montreal, Que., Feb. 28, 1865—d. Montreal, March 3, 1949).

Bedford-Jones, Henry James O'Brien (pseud., John Wycliffe), Canadian-born novelist (b. Napanee, Ont., April 29, 1887—d. Beverly Hills, Calif., May 6, 1949).

Beers, Catherine Virginia, U.S. geneticist (b. Chicago, Ill., 1891?—d. Los Angeles, Calif., April 23, 1949).

Beery, Wallace, U.S. stage and screen actor (b. Kansas City, Mo., April 1, 1886—d. Beverly Hills, Calif., April 15, 1949), left school to become an elephant trainer in a circus, then joined his brother Noah as a chorus man in a Broadway stage show. Within a short time he had replaced Raymond Hitchcock as the star of *The Yankee Tourist*. In 1913 he joined the Essanay motion picture studios in Chicago, Ill., and from that year until his death acted in more than 250 pictures. He was a comedian for the Keystone company in the early years in Hollywood, Calif., but by 1917 had begun to be featured in villain roles. In his later career he generally played rough but kindly characters. He won an Academy award in 1931 for his performance in *The Champ* and an Italian award for *Viva Villa* in 1934. Perhaps his best-beloved pictures were those in which he co-starred with Marie Dressler.

Bell, William Bonar, U.S. biologist (b. Milton, Ia., June 2, 1877—d. Washington, D.C., March 30, 1949).

Benelli, Sem, Italian poet and playwright (b. Prato, near Florence, It., Aug. 10, 1877—d. Zoagli, It., Dec. 18, 1949).

Benson, Stuart, U.S. sculptor (b. Detroit, Mich., Jan. 3, 1877—lost at sea, Oct. 17, 1949).

Berard, Christian, French artist and stage designer (b. 1902—d. Paris, Fr., Feb. 12, 1949).

Berdan, John Milton, U.S. educator and author (b. Toledo, O., July 9, 1873—d. New Haven, Conn., April 3, 1949), was graduated from Yale university, New Haven, Conn., in 1896 and received his Ph.D. degree there in 1899. After studying at the Sorbonne in Paris, he taught first at the Polytechnic institute in Toledo, O., then joined the Yale faculty in 1903. He became a professor of English literature in 1923. Although he himself wrote little, his chief contribution being *Early Tudor Poetry, 1485–1547* (1920), he was renowned for his pupils who included four winners of the Pulitzer prize and one winner of the Nobel prize. Among his former students were Sinclair Lewis, Stephen Vincent Benét, John Farrar, Donald Ogden Stewart, Thornton Wilder, Philip Barry, Russell Janney, William C. Bullitt, Arthur Bliss Lane, Cole Porter, Reginald Marsh and Charles P. Taft.

Bergius, Friedrich, German chemist (b. at Goldschmieden near Breslau [Wrocław], Ger., Oct. 11, 1884—d. Buenos Aires, Arg., March 30, 1949), succeeded during World War I in producing synthetic oil from coal. He also discovered the process for transforming wood into sugar. In 1931 he was awarded the Nobel prize for chemistry, jointly with Carl Bosch, for services regarding the invention and development of chemical high pressure methods. (*See* also *Encyclopædia Britannica*.)

Berlin, Meyer (Bar Ilan), Russian-born rabbi and Zionist leader (b. Volozhin, Russia, April 25, 1880—d. Jerusalem, April 17, 1949).

Berryman, Clifford Kennedy, U.S. cartoonist (b. Versailles, Ky., April 2, 1869—d. Washington, D.C., Dec. 11, 1949), was a self-taught artist. He joined the staff of the *Washington Evening Star* on Feb. 1, 1907. A friend of many presidents, most of whom he had lampooned at one time or another, generally in a gentle and humorous style, he was especially close to Theodore Roosevelt, whose nickname of "Teddy" Berryman attached to a bear in one cartoon, creating the still-famous "Teddy bear." Berryman won a Pulitzer prize for cartooning in 1944. He was a member of Washington's Gridiron club from 1906 on. He entered cartooning from the field of draftsmanship, and began his career on the *Washington Post* in 1891.

Biddulph, John Michael Gordon Biddulph, 2nd Baron, British banker (b. Nov. 19, 1869—d. Ledbury, Hereford., Eng., Dec. 7, 1949).

Biffin, Sir Rowland, British agriculturist and botanist (b. 1874?—d. Cambridge, Eng., July 14, 1949).

Bishop, Charles McTyeire, U.S. educator (b. Jefferson, Ashe county, N.C., Feb. 2, 1862—d. Houston, Tex., Nov. 30, 1949).

Bittner, Van Amberg, U.S. labour leader (b. Bridgeport, Pa., March 20, 1885—d. Pittsburgh, Pa., July 19, 1949).

Blair, William Reid, U.S. veterinarian and zoo director (b. Philadelphia, Pa., Jan. 27, 1875—d. New York, N.Y., March 1, 1949).

Bliss, Cornelius Newton, U.S. financier and philanthropist (b. New York city, April 13, 1874—d. New York city, April 5, 1949).

Bloch, Camille, French historian (b. Thillot, Vosges, Fr., July 27, 1865—d. Paris, Fr., Feb. 15, 1949).

Bloom, Sol, U.S. congressman (b. Pekin, Ill., March 9, 1870—d. Bethesda, Md., March 7, 1949), had little formal education, but became a play producer in his early teens, and when only 17 built his first theatre. He was secretary of the group that operated the Midway Plaisance at the World's Columbian exposition in Chicago (1893). He moved to New York, and in 1903 entered the real estate and construction field, building apartment houses and theatres. From 1923 until his death he represented in congress the 19th (the later 20th) congressional district of New York. He was chairman of the foreign affairs committee of the house of representatives through much of President Franklin D. Roosevelt's administration, and as such helped steer much important legislation through the house. Among these measures were the revision of the neutrality act; rearmament; naval expansion; selective service, and lend-lease.

49 OBITUARIES: James Truslow Adams, U.S. historian; Philip Barry, U.S. aywright; Wallace Beery, U.S. actor; Georgi Dimitrov, Bulgarian prime nister; James Forrestal, former U.S. secretary of defense

oomfield, Leonard, U.S. professor of linguistics (b. Chicago, Ill., April 1, 1887—d. New Haven Conn., April 18, 1949).

hnen, Roman, U.S. stage and screen actor (b. St. Paul, Minn., Nov. 24, 1901—d. Hollywood, Calif., Feb. 24, 1949).

nham, Ernie (Tiny), U.S. major baseball pitcher (b. 1913?—d. Pittsburgh, Pa., Sept. 15, 1949).

oth, Charles Gordon, English-born writer (b. Manchester, Eng., Feb. 12, 1896—d. Beverly Hills, Calif., May 22, 1949).

oth, George G., U.S. newspaper publisher and philanthropist (b. Toronto, Ont., Sept. 24, 1864—d. Detroit, Mich., April 11, 1949), was trained as an architect and later became the proprietor of a small ornamental iron foundry. He was married in 1887 to Ellen Warren Scripps, daughter of James E. Scripps, founder of the *Detroit News*, and later joined the paper, first (1888) as its business manager, then successively as its general manager (1897), president (1906) and, after his retirement in 1929, as a member of its board of directors. Booth also formed the Booth Newspapers, Inc., a chain of eight Michigan publications. In 1927 he and his wife established the Cranbrook foundation, to which they contributed more than $20,000,000 for cultural and educational work, including the endowment of schools.

rn, Wolfgang, German-born professor of art, painter and author (b. Breslau, Ger., Oct. 21, 1893—d. New York city, June 15, 1949).

wes-Lyon, Lilian, British poet, cousin of Queen Elizabeth (b. Dec. 22, 1895—d. London, Eng., July 25, 1949).

yle, Sir Algernon (Douglas Edward Harry), British naval officer (b. Oct. 21, 1871—d. London, Eng., Oct. 13, 1949).

and, Charles John, U.S. agricultural economist (b. Lac qui Parle county, Minn., Oct. 24, 1879—d. Washington, D.C., June 29, 1949).

eadon, Sam, U.S. baseball executive (b. New York, N.Y., July 26, 1876—d. St. Louis, Mo., May 10, 1949), attended grade school in New York city and went to St. Louis in 1902 to enter the garage business. A confirmed baseball fan, he contributed $2,000 in 1917 as a minor shareholder in a syndicate purchasing the franchise of the St. Louis Cardinals, National league baseball team. Within three years he was elected president of the club. By continually buying more stock, he eventually (1922) obtained control of the club, which he retained until he sold out in 1947 for a reported $3,000,000.

essart, Felix, German-born character actor (b. Eydtkuhnen, Ger., 1891?—d. Los Angeles, Calif., March 17, 1949).

ewer, Nicholas R., U.S. painter (b. Olmstead county, Minn., June 11, 1857—d. St. Paul, Minn., Feb. 15, 1949).

ewster, William, former U.S. carriage and auto body manufacturer (b. New York city, June 2, 1866—d. Bridgeport, Conn., Nov. 25, 1949).

ooks, Stratton Duluth, former U.S. college president (b. Everett, Mo., Sept. 10, 1869—d. Kansas City, Mo., Jan. 18, 1949).

otherton, Charles Frederick Ratcliff, British chemical manufacturer (b. Gravesend, Kent, Eng., Jan. 17, 1882—d. near York, Eng., July 28, 1949).

oughton, Joseph Melville, U.S. lawyer and senator (b. Raleigh, N.C., Nov. 17, 1888—d. Bethesda, Md., March 6, 1949), was graduated from Wake Forest college, Wake Forest, N.C., in 1910, taught school at Bunn, N.C., worked as a reporter on the *Winston-Salem Journal* (N.C.), then attended Harvard law school. He served in the North Carolina state senate from 1927 to 1929, and in 1936 was keynoter of the state Democratic convention. From 1941 through 1945 he was governor of North Carolina, and was noted as an advocate of the rights of Negroes. He was chairman of the National Planning association's committee of the south. In 1948 he was elected to the U.S. senate.

uce, William George, U.S. publisher (b. Milwaukee, Wis., March 17, 1856—d. Milwaukee, Aug. 13, 1949), founded in 1891 the Bruce Publishing company in Milwaukee. The company became one of the largest publishers of religious books in the world. Bruce was a prominent Roman Catholic layman, having been named a Knight of St. Gregory and awarded (1947) the Laetare medal of the University of Notre Dame and the Vercelli medal of the National Holy Name society.

rleigh, Harry Thacker, U.S. Negro composer and singer (b. Erie, Pa., Dec. 2, 1866—d. Stamford, Conn., Sept. 12, 1949), began choir singing in Erie, Pa., and went to New York in 1892 where he sang in the choir of St. Philip's Protestant Episcopal church. He was accepted for the choir in St. George's Protestant Episcopal church in 1894, after competing for a vacancy with 59 other applicants, and he sang with that choir until 1946. While studying at the National Conservatory of Music in New York, he received encouragement from both Edward Alexander MacDowell and Anton Dvorak. Among his most famous compositions are "Deep River," "Little Mother of Mine," which was a favourite of John McCormack, the Irish tenor, and musical settings for Laurence Hope's poems. He sang twice for King Edward VII, appeared from 1900 to 1925 in the choir of Temple Emanu-El in New York, and sang proficiently in Hebrew, Latin, Italian, French and German, as well as in English. In 1930 he was one of seven Negroes to receive a William E. Harmon award for distinguished achievement.

Burnaby, Davy, British actor (b. Buckland, Herts., Eng., April 7, 1881—d. Angmering, Sus., Eng., April 17, 1949).

Byers, John Frederic, U.S. steel executive and banker (b. Edgeworth, Pa., Aug. 6, 1881—d. New York city, June 11, 1949).

Byron, Frederick Ernest Charles Byron, 10th Baron, British clergyman (b. March 26, 1861—d. near Derby, Eng., June 6, 1949).

Caclamanos, Demetrius, Greek diplomat and editor (b. Nauplia, Gr., 1872—d. London, Eng., June 7, 1949).

Caldwell, Edward, U.S. editor and publishing executive (b. May 26, 1861—d. New York city, Aug. 13, 1949).

Capps, Stephen Reid, U.S. geologist (b. Jacksonville, Ill., Oct. 15, 1881—d. Washington, D.C., Jan. 19, 1949).

Capt, James Clyde, U.S. director of the census bureau (b. Texas, June 12, 1888—d. Bethesda, Md., Aug. 30, 1949).

Carlos, Don (of Bourbon-Sicily), Spanish prince (b. 1870?—d. Seville, Sp., Nov. 11, 1949).

Casanova, José Manuel, Cuban senator and industrialist (b. Bahia Honda, Pinar del Río, Cuba—d. Havana, Cuba, Dec. 22, 1949).

Cassidy, Sir Maurice Alan, British physician (b. Lancaster, Eng., Feb. 29, 1880—d. London, Eng., Oct. 22, 1949).

Cerdan, Marcel, French boxer (b. Sidi-bel-Abbes, Alg., July 22, 1916—d. São Miquel, Azores, Oct. 28, 1949), won the world middleweight boxing championship by defeating Tony Zale on Sept. 21, 1948. In March 1949 he knocked out Dick Turpin, the British champion. He lost his world title to Jake La Motta in Detroit, Mich., in June; he was flying to New York to fight La Motta again when his plane crashed in the Azores. In the 100 fights of his career Cerdan had lost only 2 outright and had been disqualified in 2. He had an immense following in France and his popularity compared with that of Georges Carpentier.

Charlemont, James Edward Caulfeild, 8th Viscount, British government official (b. London, Eng., May 12, 1880—d. Newcastle, County Down, N.Ire., Aug. 30, 1949).

Chesney, Arthur, British actor (b. 1882?—d. London, Eng., Aug. 27, 1949).

Chester, Sir George, British labour leader and Bank of England official (b. Jan. 16, 1886—d. Earls Barton, Northant., Eng., Jan. 16, 1949).

Chorley, Edward Clowes, English-born clergyman (b. England, 1865?—d. Cold Spring, N.Y., Nov, 2, 1949).

Christie, George, U.S. actor (b. Philadelphia, Pa., Feb. 27, 1873—d. near Toms River, N.J., May 20, 1949).

Chrysanthos Philippidis, former Greek Orthodox archbishop of Athens (b. Komotini, Thrace, Gr., March 3, 1881?—d. Athens, Gr., Sept. 29, 1949).

Chuchaga Tocornal, Miguel, Chilean diplomat and lawyer (b. Santiago, Chile, May 4, 1869—d. Santiago, May 3, 1949).

Churchill, Alfred Vance, U.S. painter and art critic (b. Oberlin, O., 1864—d. Northampton, Mass., Dec. 29, 1949).

Clapp, George Hubbard, U.S. industrialist (b. Allegheny, Pa., 1858?—d. Pittsburgh, Pa., March 31, 1949).

Clark, Alson Skinner, U.S. painter (b. Chicago, Ill., March 25, 1876—d. Pasadena, Calif., March 22, 1949).

Clark, Buddy, U.S. radio singer (b. 1905?—d. Los Angeles, Calif., Oct. 1, 1949).

Clark, Ellery Harding, U.S. lawyer, former Olympic track and field champion (b. Roxbury, Mass., March 13, 1874—d. aboard train in Massachusetts, July 27, 1949).

Clynes, John Robert, British politician (b. Oldham, Lancs., Eng., March 27, 1869—d. London, Eng., Oct. 23, 1949).

Cobham, John Cavendish Lyttleton, 9th Viscount, British government official (b. Oct. 23, 1881—d. Stourbridge, Worcs., Eng., July 31, 1949).

Coffey, Robert Lewis, Jr., U.S. congressman (b. Chattanooga, Tenn., Oct. 21, 1918—d. Albuquerque, N.M., April 20, 1949).

Cohen, Alfred Morton, U.S. lawyer (b. Cincinnati, O., Oct. 19, 1859—d. Cincinnati, March 9, 1949), was educated at the Cincinnati Law school and practised law in Cincinnati throughout his career. He was elected to the city council at the age of 25, and in 1896 was elected to the Ohio senate. He was a presidential elector on six occasions. From 1901 he was a member of the board of governors of Hebrew Union college in Cincinnati, and was its chairman from 1918 to 1937. He was international president of the Independent Order of B'nai B'rith from 1925 to 1938, becoming its honorary president for life after that date.

Colpitts, Edwin Henry, U.S. inventor and scientist (b. Pointe de Bute, N.B., Jan. 19, 1872—d. Orange, N.J., March 6, 1949).

Comstock, F. Ray, U.S. theatrical producer (b. Buffalo, N.Y., 1880—d. Boston, Mass., Oct. 15, 1949).

Comstock, William A., U.S. former governor of Michigan (b. Alpena, Mich., July 2, 1877—d. Alpena, June 16, 1949).

Connell, Richard, U.S. author (b. Poughkeepsie, N.Y., Oct. 17, 1893—d. Beverly Hills, Calif., Nov. 22, 1949).

Cook, Stanley Arthur, British Hebrew scholar (b. King's Lynn, Norf., Eng., April 12, 1873—d. Cambridge, Eng., Sept. 26, 1949).

Copeau, Jacques, French dramatist (b. Paris, Fr., Feb. 4, 1879—d. Beaune, Côte d'Or, Oct. 21, 1949), was educated at the Lycée Condorcet, Paris. One of the founders of the *Nouvelle Revue Française* (1908), he was a friend of André Gide and Jacques Rouché and wrote a stage version of Fyodor Dostoievski's *Brothers Karamazov* for the latter. He founded the Théâtre du Vieux Colombier, Paris (1913), and apart from a break during World War I produced plays there until he retired in 1924. He continued, however, to give special performances with a little group later known as La Compagnie des Quinze, whom he trained. *The Winter's Tale, Le Pacqueboat Ténacité, Bajazet,* were among his major productions.

Cousins, Arthur George, British publisher (b. 1882—d. Henley-on-Thames, Oxon., Eng., Sept. 25, 1949).

Coverdale, William Hugh, Canadian-born industrialist (b. Kingston, Ont., Jan. 27, 1871—d. New York, N.Y., Aug. 10, 1949).

Crosson, Joe, U.S. "bush pilot" (b. Minneapolis, Minn.—d. Seattle, Wash., June 21, 1949).

Cuppy, William Jacob (Will), U.S. author and critic (b. Auburn, Ind., Aug. 23, 1884—d. New York city, Sept. 19, 1949).

Curwen, Patric, British actor (b. London, Eng., Dec. 14, 1884—d. Rondebosch, Capetown U. of S.Af., May 31, 1949).

Cyril II, patriarch of Armenian Apostolic Orthodox Church in Jerusalem (d. Bierut, Leb., Oct. 28, 1949).

Damaskinos (George Papandreou), archbishop of Athens and primate of Greece (b. Dorvitsa, Gr., March 3, 1891—d. Psychiko, near Athens, Gr., May 20, 1949), was educated at the high school at Karditsa and the University of Athens and was ordained a priest in 1917. In 1922 he was elected bishop of Corinth. His election as archbishop of Athens and primate of Greece by the Holy Synod of the Greek Orthodox Church was annulled in 1938 by Premier John Metaxas for opposition to the regime, and he was exiled to a mountain monastery. In 1942, during the German-Italian occupation of Greece, he was invited to assume the office to which he had been elected, and he rapidly emerged as a spiritual leader. During the civil war between the royalists and the Communists and Communist-controlled groups that followed the liberation of Greece in 1944, Archbishop Damaskinos was selected late that year to serve as regent of Greece. In Sept. 1945 it was decided that before a plebiscite to determine whether Greece should be a monarchy or a republic, a general election should be held. Two months later, in Athens, an agreement was reached to hold the election on March 31, 1946, but Damaskinos, against the opposition of the king, suggested postponing the plebiscite to 1948. The election resulted in a decisive royalist victory, which was confirmed by the plebiscite of Sept. 1, 1946. On Sept. 27 King George returned to the country and Damaskinos thereafter took no direct part in political life.

Danforth, William Clark, U.S. gynecologist (b. Chicago, Ill., July 30, 1878—d. Evanston, Ill., Nov. 11, 1949).

Daryngton, Herbert Pike Pease, 1st Baron, British ecclesiastical commissioner (b. May 7, 1867—d. London, Eng., May 10, 1949).

Davenport, Harry, U.S. stage and screen character actor (b. New York, N.Y., Jan. 19, 1866—d. Hollywood, Calif., Aug. 9, 1949), began his stage career at the age of five and was still acting up to the time of his death. From 1936 to 1949 he appeared in 113 films, among them in the role of Dr. Mead in *Gone with the Wind* and in that of Col. Skeffington in *Kings Row.* He was one of ten children of E. L. Davenport, all of whom had successful acting careers.

Davis, Royall Oscar Eugene, U.S. chemist and soil expert (b. Newberry, S.C., July 11, 1880—d. Washington, D.C., Oct. 30, 1949).

Delavan, Paul Tuttle, U.S. astronomer (b. 1886?—d. Fernandina, Fla., Feb. 12, 1949).

De Los Rios, Fernando, Spanish educator and diplomat in exile (b. Ronda (Malaga), Sp., 1879?—d. New York city, May 31, 1949).

Dennett, Tyler, U.S. historian and educator (b. Spencer, Wis., June 13, 1883—d. Geneva, N.Y., Dec. 29, 1949), was graduated from Williams college, Williamstown, Mass., in 1904. He studied further at Union Theological seminary, New York city, and Johns Hopkins university, Baltimore, Md. He was chief of the division of publications in the U.S. state department from 1924 to 1929 and the department's historical adviser from 1929 to 1931, when he became professor of international relations at Princeton university, Princeton, N.J. In 1934 he was inducted as president of Williams college, and he resigned the post in 1937. He won a Pulitzer prize for his biography of John Hay in 1933.

De Pencier, Adam Urias, Canadian retired Anglican archbishop (b. Burritt's Rapids, Ont., Feb. 9, 1866—d. Vancouver, B.C., May 30, 1949).

De Salis, John Eugene De Salis, 8th Count, British member of diplomatic service and army officer (b. 1891—d. London, Eng., June 15, 1949).

Descaves, Lucien, French novelist (b. Paris, Fr., March 18, 1861—d. Paris, Sept. 6, 1949), entered journalism under the guidance of Alphonse Daudet. He became famous through the publication of his fifth novel, *Sous-offs* (1889), which involved him in a lawsuit with the state; he was accused of insulting the army but won his case. The Paris Commune inspired two of his novels, *La Colonne* (1902) and *Philémon, vieux de la vieille* (1913). In 1903, he was elected one of the 10 original members of the newly founded Académie Goncourt. In later life he turned toward the theatre where he had several successes, among them *Oiseaux de passage* (1904, in collaboration with Maurice Donnay) and *L'attentat* (1906, with Alfred Capus). He also published a number of books on international affairs. His last work was a book of memoirs entitled *Souvenirs d'un ours.*

De Silva, Angelita (Lady Martin-Harvey), British actress (b. Aug. 28, 1868—d. East Sheen, Sur., Eng., May 29, 1949).

Desmond, William, U.S. stage and motion-picture actor (b. New York, N.Y., 1878?—d. Hollywood, Calif., Nov. 2, 1949), was a matinee star on Broadway and in Los Angeles, Calif., before beginning his silent motion-picture career in 1915. His stage successes included *Quo Vadis, Bird of Paradise, Ben Hur, Alias Jimmy Valentine* and *Sign of the Cross.* Among his silent screen plays were *Ruggles of Red Gap, The Song of the Gringo, Nevada* and other movies of adventure and outdoor life. He played opposite such feminine stars as Billie Burke, Esther Ralston and Laura La Plante.

Devries, Herman, U.S. opera singer, teacher and critic (b. New York city, Dec. 25, 1858—d. Chicago, Ill., Aug. 24, 1949).

Díaz Arosemena, Domingo, president of Panamá (b. Panamá, then of the department of Panamá, United States of Colombia, June 25, 1875—d. Panamá, Aug. 23, 1949), was educated at Seton Hall college, South Orange, N.J., but returned to Panamá when his family's fortune was imperilled by the collapse of the French Canal company that had begun the Panama canal. He fought with the Liberal forces in the revolution which ended June 24, 1900, and when Panamá had won its independence from Colombia he entered the real-estate and cattle-raising fields in Panamá, building a great fortune. A champion of the underprivileged, especially the small farmers, he founded the Doctrinal Liberal party and remained its leader for many years. He was elected president in 1948. He was a lifelong friend of the United States in inter-American affairs.

Dickinson, Hobart Cutler, U.S. physicist and traffic authority (b. Bangor, Me., Oct. 11, 1875—d. Washington, D.C., Nov. 27, 1949).

Diefenbach, Elmer G., U.S. financier (b. Ebenezer, N.Y., Aug. 4, 1893—d. New York city, Feb. 27, 1949).

Dimitrov, Georgi, Bulgarian prime minister (b. Kovachevtsi, near Radomir, Bulg., June 18, 1882—d. near Moscow, U.S.S.R., July 2, 1949), joined in 1902 the Social Democratic party which in the following year divided into reformist or "broad" and revolutionary or "narrow" wings. Dimitrov sided with the "narrow" wing which followed the Russian bolshevists. In 1913 he was elected deputy to the Bulgarian national assembly, and four years later was imprisoned for sedition for opposing Bulgaria's participation in World War I. In 1919 the "narrow" Social Democrats reorganized themselves as the Bulgarian Workers' (Communist) party with Dimitrov and Vasil Kolarov as its leaders. By the end of 1920 Dimitrov reached Russia to take part in the third congress of the Comintern (1921), which elected him a member of its executive committee. Escaping into Yugoslavia after an abortive attempt to overthrow the Bulgarian government in Sept. 1923, Dimitrov was tried in his absence and sentenced to death. He lived in Vienna as head of the Balkan section of the Comintern until 1929 when he was transferred to Berlin as leader of the central European section. On March 9, 1933, he was arrested in the German capital and charged with complicity in the burning of the reichstag. Though acquitted on Dec. 23, 1933, he was released from prison only on Feb. 27, 1934 when he left for Moscow. In 1935 he was appointed secretary-general of the Comintern and held office until its official dissolution in 1943. In 1937 he was elected deputy of the supreme soviet.

He returned to Bulgaria in 1945 to transform the country into a Communist republic, and on Nov. 22, 1946, was appointed prime minister. In April 1949 it was announced that he had gone to the U.S.S.R. for medical treatment. He died three months later in the Barvikha sanatorium, near Moscow.

Dix, Richard (Ernest Carlton Brimmer), U.S. actor (b. St. Paul, Minn., July 18, 1895—d. Hollywood, Calif., Sept. 20, 1949).

Donahey, James Harrison, U.S. cartoonist (b. West Chester, O., April 8, 1875—d. Aurora, O., June 1, 1949), studied drawing and sculpture at the Cleveland School of Art and won a job as illustrator for the *Cleveland World* on the strength of busts he had made of William McKinley and William Jennings Bryan. He joined the *Cleveland Plain Dealer* in 1900, and drew cartoons almost daily for half a century. Many of his earlier cartoons were republished by the old *Literary Digest.*

Dorrance, George Morris, U.S. surgeon (b. Bristol, Pa., April 24, 1877—d. Philadelphia, Pa., Nov. 21, 1949).

Doubleday, Nelson, U.S. book publisher (b. Brooklyn, N.Y., June 16, 1889—d. Oyster Bay, L.I., N.Y., Jan. 11, 1949), entered the book publishing field as a young man, assisting in his father's firm, Doubleday, Page & Co. It became Doubleday, Doran in 1927 and Doubleday & Co. in 1945. Nelson Doubleday was president of Doubleday, Doran after 1928, and in 1934 upon the death of his father was made chairman of the board, continuing in that position after he resigned the presidency in 1946.

Under his leadership the firm developed into the largest book business of its kind in the world. He developed six book clubs, of which the Literary Guild of America and the Doubleday One Dollar Book club acquired the largest membership of any book clubs in the world. He was president of other Doubleday publishing interests, including Nelson Doubleday, Inc., Windward House, Inc., Garden City Publishing Company, Inc., The Blakiston company, the Country Life Press corporation and the Childrens Literary Guild, Inc.

Doubleday, Russell, U.S. author, editor and publisher (b. Brooklyn, N.Y., May 26, 1872—d. Glen Cove, L.I., N.Y., June 14, 1949), was associated with his brother, Nelson Doubleday, in the publishing firm that bore the family name. He served in the naval militia in the Spanish-American War, and from 1909 to 1912 was advertising manager of the publishing firm. He was later its vice-president, secretary and a director, and for much of his career was director of the editorial department. For some time after 1929 he edited the magazine *World's Work.* His books included *A Gunner Aboard the Yankee* (1898); *Cattle Ranch to College* (1899); *A Year in a Yawl* (1901); *Stories of Inventors* (1904); *Photography Is Fun* (1938); *Long Island* (1939); and *Tree Neighbors* (1940).

Dow, Willard Henry, U.S. chemist and chemical manufacturer (b. Midland, Mich., Jan. 4, 1897—d. near London, Ont., March 31, 1949).

Drayton, Alfred, British actor and comedian (b. Brighton, E. Sus., Eng., Nov. 1, 1881—d. London, Eng., April 26, 1949).

Drummond, Flora, British suffragette leader (b. Manchester, Lancs., Eng.—d. Carradale, Argyllshire, Scot., Jan. 17, 1949).

Dullin, Charles, French actor-producer (b. Yenne, Savoie, May 12, 1885—d. Paris, Fr., Dec. 11, 1949).

Dunne, John William, British aviation pioneer and philosopher (b. 1875—d. Banbury, Oxon., Eng., Aug. 24, 1949).

Dunstan, Sir Wyndham, British chemist (b. Chester, Ches., Eng., 1861—d. Farnham Common, Bucks., Eng., April 20, 1949).

Du Parcq, Herbert du Parcq, Baron (life peer), of Grouville, Jersey, British lord of appeal (b. St. Helier, Jersey Island, Channel Islands, Aug. 5, 1880—d. London, Eng., April 27, 1949).

Eames, Charles H., U.S. educator (b. Andover, Mass., Nov. 17, 1875—d. Billerica Center, Mass., Jan. 29, 1949).

Eason, Sir Herbert Lightfoot, British ophthalmic surgeon (b. July 15, 1874—d. London, Eng., Nov. 2, 1949).

Ehringhaus, John Christoph Blucher, U.S. lawyer, former governor of North Carolina (b. Elizabeth City, N.C., Feb. 5, 1882—d. Raleigh, N.C., July 31, 1949).

Ekblaw, Walter Elmer, U.S. geographer and explorer (b. Rantoul, Ill., March 10, 1882—d. North Grafton, Mass., June 5, 1949).

Elvin, Herbert Henry, British labour leader (b. Eckington, Derby., Eng., 1874?—d. Stanmore, Mdx., Eng., Nov. 9, 1949).

Ensor, James, Belgian painter (b. Ostend, Belg., April 13, 1860—d. Ostend, Nov. 19, 1949), the son of an English father and a Flemish mother, he later took over their shop in Ostend for the sale of sea shells and souvenirs. With the exception of three years at the Brussels academy he lived in Ostend throughout his life. He was essentially a painter of the fantastic and macabre in the persistent Flemish tradition of Jerom Bosch and Pieter Bruegel. His most ambitious work was "Entry of Christ into Brussels" (1888), a huge canvas packed with grotesque figures which he refused to sell. He painted also excellent seascapes, interiors and still-life subjects. He led an uneventful life and during World War II rumours of his death enabled him to hear obituaries broadcast in his honour. An exhibition of his work was held at the National gallery, London, in 1946.

Eriksson, Herman Gustav, former Swedish ambassador to U.S. (b. Uppsala, Swed., 1892—d. near Stockholm, Swed., Feb. 18, 1949).

Evangelides, Timothy (Timothy of Rhodes), Greek Orthodox prelate (b. Island of Mytilene [Lesbos], 1880?—d. Istanbul, Turk., Oct. 6, 1949).

Eysler, Edmund S., Austrian composer (b. Vienna, Aus., March 12, 1874—d. Vienna, Oct. 4, 1949).

Ferrari, Febo, Italian-born sculptor (b. Pallanza, It., Dec. 4, 1865—d. Short Beach, Conn., Aug. 13, 1949).

Fievez, Alexander Helenus Johannes Leopoldus, Dutch army officer and government official (b. Zutphen, Neth., June 22, 1902—d. The Hague, Neth., April 30, 1949).

Fitzsimmons, Cortland, U.S. mystery story writer (b. Richmond Hill, L.I., N.Y., June 19, 1893—d. Los Angeles, Calif., July 25, 1949).

Ford, Harriet French (Mrs. Fordé Morgan), U.S. playwright (b. Seymour, Conn., 1863?—d. New York city, Dec. 12, 1949).

Forrestal, James, former U.S. secretary of defense (b. Beacon, N.Y., Feb. 15, 1892—d. Bethesda, Md., May 22, 1949), was the son of an Irish immigrant. He studied at Dartmouth college, Hanover, N.H., and at Princeton university, and in 1916 began selling bonds for the banking firm of William A. Read & Co., subsequently Dillon, Read & Co., of which he was made a partner in 1923, vice-president in 1926 and president in 1938. He served in naval aviation in World War I.

Forrestal left his $180,000-a-year position in June 1940 to become one of Pres. F. D. Roosevelt's administrative assistants at $10,000 a year. In Aug. 1940 he was named under secretary of the navy with especial responsibility for procurement and production. He was appointed secretary of the navy in May 1944, following the death of Secretary Frank Knox. During the war he made many trips to the combat zone and repeatedly came under fire.

Upon the enactment of the National Security Act of 1947, Forrestal was appointed the first secretary of defense. Throughout the ensuing months he held repeated sessions with the civilian chiefs of the army, the navy and the air force and with the joint chiefs of staff, progressively effecting co-ordination looking toward eventual unification of many of the functions of the three services. He resigned as secretary, effective March 28, 1949, and shortly afterward entered the U.S. naval hospital at Bethesda, Md., suffering from what navy doctors called "a severe depression of the type seen in operational fatigue during the war." His condition improved, but on May 22 he plunged through a window to his death in what was termed a "sudder fit of despondency."

oster, Luther Hilton, U.S. educator (b. Clover, Va., 1888?—d. Petersburg, Va., July 5, 1949).

rance, Charles Vernon, British actor (b. Bradford, Eng., June 30, 1868—d. Gerrards Cross, Eng., April 13, 1949).

raser, Malcolm, Canadian-born artist and illustrator (b. Montreal, Que., April 19, 1869—d. Brookhaven, L.I., N.Y., June 12, 1949), achieved prominence as an illustrator for such magazines as *Century*, *St. Nicholas* and *Ladies' Home Journal*. He served with the Blue Devils in the French army in World War I, and was later a captain in the American Red Cross. He was known for his drawings for several of the Bret Harte stories, for the series of 56 symbolic paintings that he donated as a war memorial to the city of Ormond, Fla., and for several murals.

reeman, John ("Bucky"), U.S. baseball player, manager and coach (b. Catasauqua, Pa., 1872?—d. Wilkes-Barre, Pa., June 25, 1949).

ried, George, U.S. merchant marine captain (b. Worcester, Mass., Aug. 10, 1877—d. Yonkers, N.Y., July 3, 1949).

Friesz, Othon, French painter (b. Le Havre, Fr., 1879—d. Paris, Fr., Jan. 11, 1949).

Fuschini, Giuseppe, Italian government official (b. Ravenna, It., 1884?—d. Rome, It., July 9, 1949).

Gaige, Crosby, U.S. theatrical producer and editor (b. Nelson, N.Y., July 26, 1882—d. Peekskill, N.Y., March 8, 1949).

Garner, Curtis S., U.S. engineer (b. Shelby Grove, Tenn., 1876?—d. Ben Avon, Pa., April 11, 1949).

Gathorne-Hardy, Sir (John) Francis, British army officer (b. Jan. 14, 1874—d. Marlborough, Wilts., Eng., Aug. 21, 1949).

Gendreau, Joseph Ernest, Canadian physician, educator and cancer specialist (b. Coaticook, Que., 1880?—d. Montreal, Que., June 5, 1949), studied at St. Hyacinthe seminary, then received his M.D. and Ph.D. degrees at the University of Paris. He was also licentiate in sciences of the Sorbonne, Oxford university and the University of Leipzig. The first student of Marie Curie, he founded and became director of the Radium Institute of Cancer Research in Montreal. In 1941 he became vice-president of the American Radium society. He served as president of the Canadian Association of Radiologists and of the Canadian Chemical association, and was a fellow of the Royal College of Physicians (Can.).

Giannini, Amadeo Peter, U.S. banker (b. San Jose, Calif., May 6, 1870—d. San Mateo, Calif., June 3, 1949), the son of an Italian immigrant, entered the banking business when a legacy from his father-in-law made him a director of the Columbus Savings and Loan society in San Francisco. He founded the Bank of Italy in that city, and concentrated on making loans to small businesses. After the San Francisco earthquake, April 18, 1906, he salvaged the resources of the bank and promptly reopened, making loans for the rebuilding of the city. He anticipated the panic of 1907, to meet which he accumulated large stocks of gold. He bought up many small banks, making them branches of his Bank of Italy, and in 1919 organized the Bancitaly corporation, which was succeeded in 1928 by Transamerica corporation as a holding company for his financial interests. In 1929 he purchased the Bank of America, and in 1930 consolidated his banks into the Bank of America National Trust and Savings association, which at the end of 1948 had 517 branches in California and others abroad, and assets of more than $6,000,000,000. In 1949 Giannini was defending his properties in a federal reserve board hearing, on the question of whether Transamerica was in violation of the anti-trust laws through the establishment of a credit monopoly.

Gillespie, W. Fulton, Canadian surgeon (b. Manilla, Ont., May 22, 1891—d. Edmonton, Alta., Dec. 3, 1949).

Giraud, Henri Honoré, French general (b. Paris, Fr., Jan. 18, 1879—d. Dijon, Fr., March 11, 1949), was graduated from the St. Cyr Military academy and served as a captain of Zouaves in World War I. Taken prisoner, he subsequently escaped from a German prison camp—a feat he repeated in World War II. He served as second in command to Marshal Hubert Lyautey in the Rif war in North Africa in 1925–26, and was commander of the unit that received the surrender of the leader of the warriors, Abdel Krim. In World War II he was named commander of the 7th army group in northern France. Captured by the Germans in 1940, he escaped in April 1942 and reported to the Vichy government. He soon fled France, however, and in Nov. 1942, at the start of the Allied invasion of North Africa, he became commander in chief of all French armed forces in North Africa. After the assassination of Admiral Jean Darlan the following month, he became high commissioner of French North Africa. From June to November 1943 he was co-president, with Charles de Gaulle, of the French Committee of National Liberation, but he resigned this post and in April 1944 his position as commander in chief was abolished and he was retired. After the war he was elected a deputy to the constituent assembly and served one term.

Golay, Maurice, Swiss banker (b. Geneva, Switz., Aug. 29, 1891—d. Basle, Switz., Nov. 18, 1949).

Gollan, Sir Henry Cowper, British colonial official (b. Coquimbo, Chile, Jan. 8, 1868—d. London, Eng., Aug. 5, 1949).

Goodman, Paul, British Zionist worker and author (b. Tartu [Dorpat], Est., April 10, 1875—d. London, Eng., Aug. 13, 1949).

Gore, Thomas Pryor, U.S. attorney and senator (b. Webster county, Miss., Dec. 10, 1870—d. Washington, D.C., March 16, 1949).

Gould, Charles Newton, U.S. geologist (b. Lower Salem, O., July 22, 1868—d. Norman, Okla., Aug. 13, 1949).

Gour, Sir Hari Singh, Indian educator (b. Saugor, Central Provinces, India, Nov. 26, 1872—d. Saugor, Dec. 25, 1949).

Grabski, Stanisław, Polish government official (b. Borów, near Łowicz, Pol., April 5, 1871—d. Sulejówek, near Warsaw, Pol., May 6, 1949).

Graham, Frank Dunstone, U.S. economist (b. Halifax, N.S., Jan. 1, 1890—d. Princeton, N.J., Sept. 24, 1949).

Graham, Morland, British stage and screen actor (b. Glasgow, Scot., Aug. 8, 1891—d. London, Eng., April 8, 1949).

Grant, Robert J., U.S. director of the mint, 1923–33 (b. Nova Scotia, 1862?—d. Pasadena, Calif., Nov. 24, 1949).

Gratke, Charles (Edward), U.S. newspaperman (b. Astoria, Ore., Aug. 11, 1901—d. near Bombay, India, July 12, 1949), worked on his father's *Astoria Evening Budget* (Ore.), then on the *Detroit News*, the *Portland Oregonian* and the *Oregon City Enterprise*. He became foreign editor of the *Christian Science Monitor* in 1937, after having served on that paper's foreign staff in Berlin during the rise of Hitler. He won the annual award of Sigma Delta Chi, national journalism fraternity, in 1946 for his survey of Germany under the U.S. occupation, and in 1947 made a new and similar survey at the invitation of the secretary of the army. He was one of 13 U.S. newspaper and radio personalities killed when a Dutch air liner, returning them from a survey of Indonesia, crashed.

Graves, George, British comedian (b. London, Eng., Jan. 1, 1876—d. London, April 2, 1949).

Greacen, Edmund W., U.S. painter (b. New York city, 1877—d. White Plains, N.Y., Oct. 4, 1949).

Greaves, Leonard, British painter (b. London, Eng., May 13, 1918—d. France, 1949).

Green, George A. L., South African journalist and editor (b. Portsmouth, Hants., Eng., 1868—d. Capestown, U. of S.Af., Aug. 10, 1949).

Greenwood, Major, British epidemiologist (b. Aug. 9, 1880—d. London, Eng., Oct. 5, 1949).

Griffin, William, U.S. editor and publisher (b. Wheaton, Ill., Dec. 25, 1897—d. New York city, June 28, 1949).

Griniger, Alexander, U.S. artist and theatrical designer (b. Albert Lea, Minn., Jan. 26, 1865—d. Briarcliff Manor, N.Y., March 8, 1949).

Guggenheim, Solomon R., U.S. mining magnate and financier (b. Philadelphia, Pa., Feb. 2, 1861—d. near Port Washington, L.I., N.Y., Nov. 3, 1949), was one of seven Guggenheim brothers, who together amassed a family fortune in many disparate fields. Though Solomon Guggenheim was especially identified with nitrates and copper, he presumably helped participate in family discussions on business affairs of their interests in other fields of mining and finance as well, since tradition had it that any of the brothers could veto any business proposition, and action would be taken only by unanimous vote of the brothers. Two companies with which he was especially identified were the Kennecott Copper corporation and the American Smelting and Refining company. Though united in business affairs, the brothers acted independently in their various philanthropies. Thus, while other Guggenheim brothers set up foundations for the advancement of aviation and for fellowships for writers, Solomon established a million-dollar foundation to promote art and art appreciation, especially with reference to nonobjective art. He himself had amassed a large collection of representative works of modern art.

Guilford, Frederick George North, 8th Earl of, British civil engineer (b. Nov. 19, 1876—d. Menton, Fr., Nov. 9, 1949).

Haines, Elwood Lindsay, U.S. Protestant Episcopal bishop (b. Philadelphia, Pa., March 12, 1893—d. Los Angeles, Calif., Oct. 28, 1949).

Hajir, Abdul Hussein, Iranian statesman (b. 1897?—d. Tehran, Iran, Nov. 5, 1949), was prime minister from June 13 to Nov. 8, 1948. He was finance minister in the cabinet of Ahmad Ghavam-es-Saltaneh, 1946–47, and had previously held the portfolios of interior, commerce and industry, and roads and communications. As prime minister he enforced the strict observance of Ramadan and was afterward minister at court. On Nov. 4, 1949, while attending a religious ceremony at the Sapah Salar mosque, Tehran, he was shot at close range and died the following day.

Halsey, Sir Lionel, British officer of the royal navy (b. Feb. 26, 1872—d. Biggleswade, Beds., Eng., Oct. 26, 1949).

Halstead, Albert, former member U.S. consular service, newspaper editor (b. Cincinnati, O., Sept. 19, 1867—d. Old Lyme, Conn., May 20, 1949).

Hammerton, Sir John Alexander, British editor and author (b. Alexandria, Scot., 1871—d. London, Eng., May 12, 1949).

Hammond, John Lawrence Le Breton, British historian and journalist (b. Drighlington, Yorks., Eng., July 18, 1872—d. Hemel Hempstead, Herts., Eng., April 7, 1949). (*See* biography in *Encyclopædia Britannica.*)

Handley, Tommy, British radio comedian (b. Liverpool, Eng., Jan. 12, 1896—d. London, Eng., Jan. 9, 1949).

Hannegan, Robert Emmet, former U.S. postmaster general (b. St. Louis, Mo., June 30, 1903—d. St. Louis, Oct. 6, 1949), studied law at St. Louis university and established his law practice in St. Louis. He also became active in ward politics and in 1933 took over the post of Democratic committeeman in St. Louis' 21st ward. That same year he became chairman of the Democratic city central committee. In 1942, he was offered the post of collector of internal revenue in the eastern district of Missouri, which he at first declined but later accepted, and the following year was named U.S. commissioner of internal revenue. On Jan. 22, 1944, he was elected chairman of the Democratic national committee. He was a leading strategist in the fourth-term campaign for Pres. F. D. Roosevelt. He served as postmaster general under Pres. Harry S. Truman, but resigned from the cabinet and from the chairmanship of the national Democratic committee on Nov. 25, 1947. At that time he, as head of a syndicate, purchased the majority interest in the St. Louis Cardinals baseball club, but Hannegan stepped down as president of the Cardinals in Jan. 1949, selling his interest to Fred M. Saigh, Jr., for a reputed $1,000,000.

Hansen, William Webster, U.S. physicist (b. Fresno, Calif., May 27, 1909—d. Palo Alto, Calif., May 23, 1949).

Hapgood, Powers, U.S. labour union leader (b. Chicago, Ill., Dec. 28, 1899—d. Indianapolis, Ind., Feb. 4, 1949).

Harald Christian Frederick, Danish prince (b. Charlottenlund, Den., Oct. 8, 1876—d. Copenhagen, Den., March 30, 1949), was a brother of King Christian X of Denmark and King Haakon VII of Norway.

Harding, Malcolm Taylor MacAdam, former Canadian Anglican archbishop (b. Barkway, Herts., Eng., Jan. 20, 1863—d. Toronto, Ont., April 21, 1949).

Harlan, Byron Berry, U.S. tax court judge (b. Greenville, O., Oct. 22, 1886—d. Cogan Station, Pa., Nov. 11, 1949).

Harriman, Joseph Wright, U.S. banker (b. Belleville, N.J., Jan. 31, 1867—d. Sea Cliff, L.I., N.Y., Jan. 23, 1949).

Harrington, Philip, U.S. subway and superhighway engineer (b. Worcester, Mass., Jan. 28, 1886—d. West Palm Beach, Fla., Feb. 11, 1949).

Harris, Frederic Robert, U.S. naval officer (b. New York city, April 10, 1875—d. New York city, July 20, 1949).

Harvey, Horace, Canadian jurist (b. Elgin Co., Ont., Oct. 1, 1863—d. Edmonton, Alta., Sept. 9, 1949).

Haslehurst, Ernest William, British water-colour artist (b. Walthamstow, Ess., Eng., 1886—d. Blackheath [London suburb], Eng., July 3, 1949).

Hay, Will (William Hay Thompson), British comedian (b. Eng., Dec. 6, 1888—d. London Eng., April 18, 1949).

Heath, S. Burton, U.S. newspaperman (b. Lynn, Mass., Dec. 20, 1898—d. near Bombay, India, July 12, 1949), began newspaper work while a schoolboy as a hand compositor on a weekly in Bradford, Vt. He served in the infantry in World War I, and later worked on the staff of the *Burlington Free Press* (Vt.), while attending the University of Vermont, graduating in 1926. He later joined the *New York World Telegram* and in 1940 was awarded the Pulitzer prize for reporting. In 1942 he joined the Newspaper Enterprise association, and for the balance of his career the N.E.A. syndicate distributed his feature stories to more than 600 newspapers. He was one of 13 newspaper and radio persons who were killed in the crash of a Dutch air liner that was returning them from a survey of postwar Indonesia.

Heggen, Thomas Orlo, U.S. author (b. Fort Dodge, Ia., Dec. 23, 1919—d. New York, N.Y., May 19, 1949), was graduated from the University of Minnesota, Minneapolis. He worked for *Reader's Digest*, resigning to enlist in the navy in 1941 immediately after the Pearl Harbor attack. During his five-year navy career he spent most of his service at sea, one year in the Atlantic and the rest in the Pacific, participating in four major Pacific campaigns. Some of the original material for his novel, *Mister Roberts*, first appeared in the *Atlantic Monthly*. It sold nearly 1,000,000 copies in novel form and several thousand additional copies in the form of a play, of which he was coauthor with Joshua Logan. The play, concerning life aboard a navy supply ship, was an outstanding Broadway hit. Heggen was found drowned in the bathtub of his home in New York city.

Heil, Julius Peter, U.S. industrialist (b. Dusemond, Ger., 1876—d. Milwaukee, Wis., Nov. 30, 1949), was taken to Wisconsin as an infant, attended rural school, then learned the mechanic's trade and opened a machine shop. In 1901 he founded the Heil company of Milwaukee, which eventually employed more than 2,000 persons in the manufacture of water systems, oil heaters, tanks and heavy equipment. He served as governor of Wisconsin from 1939 through 1942.

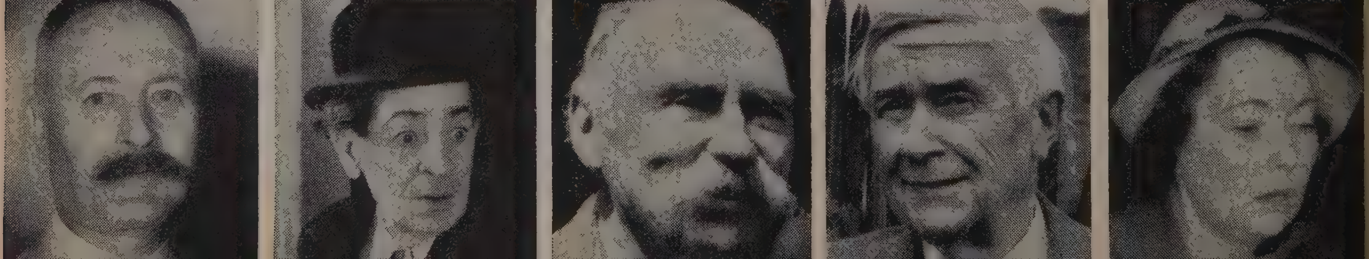
Heindel, Augusta Foss (Mrs. Max Heindel), U.S. cofounder of Rosicrucian fellowship (b. near Mansfield, O., Jan. 27, 1865—d. Oceanside, Calif., May 9, 1949).

Henderson, Alice Corbin (Mrs. William P. Henderson), U.S. poet, cofounder of *Poetry* magazine (b. St. Louis, Mo., 1881—d. Tesuque, N.M., July 18, 1949).

Hendrick, Burton Jesse, U.S. author (b. New Haven, Conn., Dec. 8, 1871—d. New York, N.Y. March 24, 1949), attended Yale, where he edited both the *Yale Courant* and the *Yale Literary Magazine*. He became editor of the *New Haven Morning News* in 1896, later moving to the *New York Post*. In 1905 he joined *McClure's Magazine*, crusading with Lincoln Steffens, Ida M. Tarbell, Ray Standard Baker and others, his specialty being the subject of life-insurance reforms. In 1913 he joined *World's Work* where he became attached to research and as a result wrote *Age of Big Business*. In 1920 he was co-author, with Vice Admiral William S. Sims, of *Victory at Sea*, the story of U.S. naval forces in Europe in World War I; this book brought Hendrick his first Pulitzer prize. His second was awarded for his *Life and Letters of Walter H. Page* (1922), and the third for *The Training of an American* (1928), covering Ambassador Page's earlier years. Other major works included *The Jews in America* (1923); *The Life of Andrew Carnegie* (1932); *The Lees of Virginia* (1935); *Bulwark of the Republic* (1937) and *Statesmen of the Lost Cause* (1939).

Hernandez, Mateo, Spanish sculptor (b. Bejar, Sp., 1888—d. Meudon, Fr., Nov. 25, 1949).

Hicks, Sir (Edward) Seymour, British actor and author (b. St. Helier, Jersey, Chan.Is., Jan. 30, 1871—d. Fleet, Hants., Eng., April 6, 1949). From 1889 to 1891 he toured Great Britain and the United States with Mr. and Mrs. Kendal. In 1901 his play *Bluebell in Fairyland* was a great success with his wife, Ellaline Terriss, in the name part. He later wrote other musical plays



1949 OBITUARIES: Henri Honoré Giraud, French general; Willie Howard, U.S. comedian; Douglas Hyde, first president of Eire; Maurice Maeterlinck, Belgian author; Margaret Mitchell, U.S. author

including *The Catch of the Season* (with Cosmo Hamilton) in which he played the lead. He built the Aldwych theatre, opened it in 1905, and in the next year built the Globe. During World War I he organized concert parties for the troops in France. In March 1922 he appeared in one of his most characteristic and successful parts *The Man in Dress Clothes* (an adaptation from the French). He wrote several books of autobiography and memoirs and in *Vintage Years* (1943) looked back with regret to the Edwardian era. He was knighted in 1935. In 1939 he became controller of Entertainments National Service association and in 1940 chairman of the Advisory Production council.

ggins, Victor, U.S. painter (b. Shelbyville, Ind., June 28, 1884—d. Taos, N.M., Aug. 23, 1949).

lles, Charles Dewey, U.S. Republican party leader (b. Belmont Co., O., June 23, 1867—d. Speonk, L.I., N.Y., Aug. 27, 1949).

oagland, Dennis Robert, U.S. botanist (b. Golden, Colo., April 2, 1884—d. Berkeley, Calif., Sept. 5, 1949).

obbins, James Russell, U.S. copper mining executive (b. Madison, Wis., Aug. 19, 1883—d. Butte, Mont., Nov. 14, 1949).

odges, Barbara K. (ELIZABETH CAMBRIDGE, pseud.), British novelist (b. Rickmansworth, Herts., Eng., Oct. 7, 1893—d. Battle, Sus., Eng., March 3, 1949).

odgkinson, Francis, English-born inventor (b. London, Eng., June 16, 1867—d. Toledo, O., Nov. 4, 1949).

ohenthal, William D., U.S. diplomat (b. California, 1896—d. San Francisco, Calif., Feb. 8, 1949).

okinson, Helen E., U.S. cartoonist (b. Mendota, Ill.—d. Washington, D.C., Nov. 1, 1949).

opson, Howard Colwell, U.S. financier (b. Fort Atkinson, Wis., May 8, 1882—d. near Greenwich, Conn., Dec. 22, 1949).

ouser, Lionel F., U.S. film writer-producer (b. New York city, April 16, 1908—d. Los Angeles, Calif., Nov. 12, 1949).

oward, Willie (WILLIAM LEVKOWITZ), U.S. comedian (b. Neustadt, Ger., April 13, 1886—d. New York, N.Y., Jan. 12, 1949), was taken to the United States with his family that year and attended school only until his early teens. His brother, Eugene, had entered show business, and Willie followed him, becoming first a song plugger, next a character imitator and eventually joining Eugene in a comedy vaudeville act. From 1903 to 1912 the brothers toured the U.S. in vaudeville, then for ten years appeared in shows produced by the Shuberts at the Winter Garden in New York.

After a return to vaudeville, they appeared in the George White *Scandals* of 1928, 1931, 1932, 1933 and 1936. Willie Howard also appeared in *Ballyhoo of 1932*, the *Follies* of 1934 and 1935 and *The Show Is On* in 1937. He appeared in the motion pictures *Millions in the Air* and *Rose of the Rancho*, and also was well known to radio.

ubback, Eva Marian, British college principal (b. 1886—d. London, Eng., July 15, 1949).

ulbert, Homer Bezaleel, U.S. professor and expert on far eastern affairs (b. New Haven, Vt., 1863?—d. Seoul, Kor., Aug. 5, 1949).

urban, Vladimir E. S., Czech diplomat (b. Turciansky Svaty Martin, Slovakia, Hung., April 4, 1883—d. Prague, Czech., Oct. 26, 1949).

yamson, Moses, Polish-born rabbi and scholar (b. Suwalki, Russian Pol., Sept. 3, 1862—d. New York city, June 9, 1949).

yde, Douglas, first president of Eire (now Ireland), historian and poet (b. Frenchpark, County Roscommon, Ire., Jan. 17, 1860—d. Dublin, Ire., July 12, 1949), was the son of the Rev. Arthur Hyde, canon of Elphin and rector of Tibohine, and was educated at Trinity college, Dublin. From his earliest days he acquired a love for the Irish language, which at that time was neglected by scholars, and in 1878 he joined the Society for the Preservation of the Irish Language. Later he left the society and started the Gaelic union which published the first periodical in the Irish language. He founded the Gaelic league in 1893 and held the position of president until 1915. He was elected a senator in 1925 and again in 1938. When the new constitution was created in 1937 all parties agreed on the election of Hyde as the first president of Eire. He held office from June 25, 1938, until June 25, 1945, when he was succeeded by Seán O'Kelly. In 1891 he was interim professor of modern languages at the University of New Brunswick, Fredricton, Canada, and from 1909 to 1932 was professor of modern Irish at University college, Dublin. Among his works in English were *Story of Early Gaelic Literature* (1895), *A Literary History of Ireland* (1899) and *Mediaeval Tales from the Irish* (1899). He also wrote many books, poems and plays in Irish and in *Mise Agus an Connradh* (1938) he told of his association with the Gaelic league. Many of his poems, plays, retelling of old legends, etc., were published under his pseudonym, *An Craoibhin Aoibhinn* ("the delightful little branch," *i.e.*, Ireland). (*See* also *Encyclopædia Britannica.*)

arra Garcia, Oscar, Argentine diplomat (b. Moron, Buenos Aires province, Arg., Sept. 15, 1899—d. Buenos Aires, Arg., July 25, 1949).

glesden, Sir Charles, British journalist and author (b. Ashford, Kent, Eng., 1861—d. Ashford, June 26, 1949).

ms, Augustus Daniel, British entomologist (b. England, Aug. 24, 1880—d. near Sidmouth, Dev., Eng., April 3, 1949).

gham, Harvey, U.S. editor and publisher (b. Algona, Ia., Sept. 8, 1858—d. Des Moines, Ia., Aug. 21, 1949).

lli, Vincenzo, Italian painter (b. Naples, It., Sept. 30, 1860—d. Naples, Nov. 27, 1949).

iwara, Kanji, Japanese military officer (b. 1889—d. Yamagata, Jap., Aug. 15, 1949).

anov, Dimiter (ELINE-PELINE, pseud.), Bulgarian author (b. Sofia, Bulg., Aug. 1, 1878—d. Sofia, Dec. 3, 1949).

anov, Vyacheslav, Russian writer (b. Moscow, Russia, Feb. 28, 1866—d. Rome, It., July 16, 1949).

Jaloux, Edmond, French novelist (b. Marseilles, Fr., June 18, 1878—d. Lausanne, Switz., Aug. 22, 1949).

James, Eldon Revare, U.S. professor of law (b. Newport, Ky., Nov. 21, 1875—d. Gloucester, Mass., Jan. 2, 1949).

Jefferson, Mark, U.S. geographer (b. Melrose, Mass., March 1, 1863—d. Ypsilanti, Mich., Aug. 8, 1949).

Jester, Beauford Halbert, U.S. governor (b. Corsicana, Tex., Jan. 12, 1893—d. Houston, Tex., July 11, 1949), was graduated from the University of Texas, Austin, in 1916 and received his LL.B. degree there in 1920. He saw action in France during World War I, and later set up his law practice in Corsicana. He was elected to the state university's board of regents in 1929, serving until 1935, the last two years as chairman. In 1942 he was a successful candidate for one of the places on Texas' three-man railroad commission. In 1946 he was elected governor of the state. A believer in states' rights, he initially sided with Gov. J. Strom Thurmond of South Carolina when the latter led a group of southern governors in opposition to Pres. Harry S. Truman's civil rights program, but he returned to full support of the Democratic party before the 1948 presidential election.

Jewett, Frank Baldwin, U.S. physicist and research engineer (b. Pasadena, Calif., Sept. 5, 1879—d. Summit, N.J., Nov. 18, 1949), was educated at Throop Polytechnic institute (later California Institute of Technology, Pasadena) and the University of Chicago, spent two years as an instructor at Massachusetts Institute of Technology (Cambridge) and entered the engineering department of American Telephone and Telegraph company. He became this company's research head and, in 1908, its transmission and protection engineer. Between 1912 and 1922 he was assistant chief engineer, chief engineer and vice-president of Western Electric company. In 1925 he was elected vice-president in charge of development and research of A.T. & T., and president of the Bell Telephone laboratories. Out of these laboratories during his tenure came such inventions and developments as the dial system, practical talking motion pictures, high-tonal-quality electrical phonographs, long-distance transmission of pictures by wire, transatlantic telephone and high-speed cable. In 1940 he was appointed by Pres. Franklin D. Roosevelt to the Office for Emergency Management. In June of that year he was named one of the eight members of the National Defense Research committee of the Office of Scientific Research and Development, and he directed its submarine warfare laboratories. He subsequently lent his advice and inventive talent to the army signal corps and army ordnance. In 1944 he was one of 12 civilian, army and navy members of a committee to create a high command in science equivalent in rank to army and navy high commands.

Johnson, George E. Q., U.S. attorney (b. Harcourt, Ia., July 11, 1874—d. Chicago, Ill., Sept. 19, 1949), studied at Tobin college, Fort Dodge, Ia., and at Lake Forest college, Lake Forest, Ill., where he received a law degree in 1900. He was named U.S. district attorney in Chicago by Pres. Calvin Coolidge in 1927 and was reappointed in 1931 by Pres. Herbert Hoover. In the fall of 1931 he began the first of the government cases against major underworld figures on charges of income tax evasion. He successfully prosecuted, among others, Al Capone, Ralph Capone, Jake and Sam Guzik, Frank Nitti, Terry Druggan and Frankie Lake, as well as other prohibition era gangsters. He was appointed a U.S. district court judge by President Hoover in Aug. 1932, but the senate failed to confirm the appointment and as the incoming Pres. F. D. Roosevelt did not reappoint him, he retired from the bench after seven months' service. He was active in midwest Republican politics.

Johnson, William Gary (BUNK), U.S. trumpet player and jazz band leader (b. 1880?—d. New Iberia, La., July 7, 1949).

Julian, William Alexander, U.S. government official (b. Franklin county, Ky., Aug. 6, 1860—d. Bethesda, Md., May 29, 1949), was graduated from Dodds college in Frankfort, Ky., in 1888, and entered the shoe business in Cincinnati, O. In 1890 he formed the partnership of Alter and Julian, and in 1891 the Julian and Kokenge company, which became an outstanding shoe manufacturing concern. He later served as president of the Queen City Trust company and as vice-president of the Citizens National bank in Cincinnati. He entered politics relatively late in life, and became Democratic national committeeman from Ohio. He ran unsuccessfully for the U.S. senate in 1920. On June 1, 1933, he was sworn in as treasurer of the United States, serving until his death in an automobile accident.

Jung, Guido, Italian government official (b. Palermo, It., Feb. 1, 1876—d. Palermo, Dec. 26, 1949).

Keeler, Leonarde, U.S. criminologist (b. Berkeley, Calif., Oct. 30, 1903—d. Sturgeon Bay, Wis., Sept. 20, 1949), studied criminology as a result of the influence of August Vollmer, former chief of police of Berkeley. While a student at Stanford university, Stanford, Calif., Keeler built a lie detector machine. This device had been introduced in police circles, but Keeler made a successful test of his in 1923 and later developed it until it was widely adopted by police agencies as well as by doctors, hospitals and various businesses. Technically called a polygraph, the lie detector records variations in blood pressure, rate of heartbeat and respiration on a moving strip of paper, and from the record it can sometimes be ascertained when the subject is lying. Keeler became an authority on deception tests and headed the scientific crime detection laboratory at Northwestern university, Evanston, Ill., but was in private practice at the time of his death.

Keller, Henry George, U.S. painter (b. Cleveland, O., April 3, 1870—d. San Diego Calif., Aug. 3, 1949).

Kelly, William J., U.S. actor (b. Newburyport, Mass., June 16, 1875—d. New York city, May 17, 1949).

Kent, Arthur Atwater, U.S. inventor (b. Burlington, Vt., Dec. 3, 1873—d. Bel-Air, Calif., March 4, 1949), attended Worcester Polytechnic institute, Worcester, Mass. Many of his inventions, of which he patented 97, were concerned with electrical equipment, and in 1902 he established the Atwater Kent Manufacturing Works in Philadelphia, Pa., to make telephones and voltmeters. He next began manufacturing his hot-spark ignition system, which was adopted by many automobile makers. His plant continued making automobile ignition, starting and lighting systems until 1923, when he produced his first radio. Within three years he had made his millionth set. He discontinued manufacturing and sold his plant in 1936.

In the early days of network radio the Atwater Kent hour on Sunday evenings was one of the most popular radio shows, featuring musical celebrities and the winners of talent searches conducted by the Atwater Kent foundation for music students. Atwater Kent also restored the Betsy Ross house in Philadelphia; bought the Franklin Institute building in Philadelphia and gave it to the city as a museum.

Keynes, John Neville, British political economist (b. Salisbury, Wilts., Eng., Aug. 31, 1852—d. Cambridge, Eng., Nov. 15, 1949).

Kimball, Katharine, U.S.-born artist and etcher (b. Fitzwilliam, N.H., April 17, 1866—d. Bath, Eng., March 23, 1949).

Kimes, Ira L., U.S. marine corps general (b. Fayetteville, Tenn., Aug. 8, 1899—d. Bethesda, Md., Feb. 4, 1949), was graduated from the U.S. Naval academy in 1923 and appointed to the marine corps. In 1927 he became a student aviator at the naval air station at Pensacola, Fla. He was in command of the marine air forces that defended the island of Midway during the crucial Battle of Midway, June 4, 1942, and received the distinguished service medal for his services in that battle. He was placed on the retired list for physical disability in Feb. 1945, but remained on active duty until Dec. 23, 1945.

Kim Koo, Korean rightest patriot (b. 1875?—d. Seoul, Kor., June 26, 1949).

Kindler, Hans, U.S. cellist and conductor (b. Rotterdam, Neth., Jan. 8, 1893—d. Watch Hill, R.I., Aug. 29, 1949), made his first solo appearance in Rotterdam at the age of 10. A graduate of the Conservatory of Music in Rotterdam, he played in many European capitals, in orchestras and as solo cellist, before moving to the U.S. in 1914. After five years with the Philadelphia orchestra, as first cellist and solo cellist, he devoted himself to solo appearances, and in 1929 set out on a world tour. In 1931, having returned to the U.S., he founded the National Symphony orchestra in Washington, D.C., which he conducted until Dec. 1948.

King, William Henry, U.S. legislator (b. Fillmore, Millard county, Utah, June 3, 1864—d. Salt Lake City, Utah, Nov. 27, 1949).

Kingsbury, Susan M(yra), U.S. social economist (b. San Pablo, Calif., Oct. 18, 1870?—d. Bryn Mawr, Pa., Nov. 28, 1949).

Kingsmill, Hugh (Hugh Kingsmill Lunn), British author (b. Madras, India, Nov. 21, 1889—d. Brighton, Eng., May 15, 1949).

Kirke, Sir Walter Mervyn St. George, British army officer (b. Jan. 19, 1877—d. near Carlisle, Cumb., Eng., Sept. 3, 1949).

Knerr, Harold H., U.S. cartoonist (b. Bryn Mawr, Pa., 1883?—d. New York city, July 8, 1949).

Knickerbocker, Hubert Renfro, U.S. newspaperman (b. Yoakum, Tex., Jan. 31, 1898—d. near Bombay, India, July 12, 1949), was graduated from Southwestern university, Georgetown, Tex., and took postgraduate studies at Columbia university in New York. He began newspaper work on the *Newark Morning Ledger*, then transferred to the *New York Evening Post* and later to the *New York Sun*. In 1925 he became a foreign correspondent for International News Service, and continued with that organization for 16 years, winning the Pulitzer prize in 1931. He covered the battles of France and Britain in 1940 and 1941, the early campaigns in the Pacific and subsequent campaigns in the European theatre. From 1941 to 1945 he was chief of foreign service of the *Chicago Sun*. His books included *The Red Menace* (1931) and *Will War Come in Europe?* (1934). He was one of 13 U.S. newspaper and radio correspondents killed in the crash of a Dutch air liner which was returning them from a survey of conditions in Indonesia.

Knox, Sir Errol Galbraith, Australian newspaper executive (b. June 25, 1889—d. Melbourne, Austr., Oct. 17, 1949).

Koopman, John R., U.S. painter (b. Falmouth, Mich., June 5, 1881—d. Saugerties, N.Y., Sept. 16, 1949).

Kostov, Donche, Bulgarian biologist (b. Lokorsco, Bulg., June 18, 1897—d. Sofia, Bulg., Aug. 9, 1949).

Kostov, Traicho, Bulgarian politician (b. Sofia, Bulg., June 17, 1897—d. Sofia, Dec. 16, 1949). After studying law at the University of Sofia he was active in the Bulgarian Workers' (Communist) party. For his part in the Sept. 1923 uprising he was arrested and sentenced in the following year to five years' imprisonment. On release from prison he went to Moscow, U.S.S.R., where he spent two years. Returning to Bulgaria in 1931, he worked there as a member of the illegal Communist party. From 1941 he engaged in partisan resistance, was arrested on April 29, 1942, and sentenced to life imprisonment. When freed in Sept. 1944, he became a member of the committee of the Fatherland front, a member of the Politburo and secretary of the central committee of the Communist party. He was elected deputy for Sofia in Nov. 1945 and Oct. 1946. He joined the second Kimon Georgiev cabinet on March 31, 1946, as deputy prime minister, retaining this position in the first Georgi Dimitrov cabinet (Nov. 23, 1946); in addition, in the second Dimitrov cabinet (Dec. 11, 1947), he became chairman of the cabinet economic and financial committee. In June 1948 he was one of the two Bulgarian delegates at the Cominform meeting at Sinaia, Rum. On April 4, 1949, it was announced in Sofia that he had been removed from the Politburo of the central committee of the Communist party and relieved of his government duties because he had formed "an insincere and unfriendly attitude to the U.S.S.R." On June 12 he was expelled from the party and on July 20 deprived of his parliamentary immunity, although he had already been arrested on June 25. He was indicted for espionage and high treason. At the trial which began in Sofia on Dec. 7 he denied the major charges and most of the depositions which, it was alleged, he had previously made. He was condemned to death on Dec. 14 and executed two days later.

Krass, Nathan, Russian-born rabbi (b. Odessa, Russia, Aug. 1, 1880—d. New York city, Nov. 22, 1949).

Krogh, Schack August Steenberg, Danish physiologist (b. Grenaa, Den., Nov. 15, 1874—d. Copenhagen, Den., Sept. 13, 1949), graduated in zoology at the University of Copenhagen in 1899 and took his doctor's degree in 1903. In 1920 he was awarded the Nobel prize in physiology and medicine for his discovery of the regulation of the motor mechanism of the capillaries. He was elected a foreign member of the Royal society in 1937 and was appointed to give the society's Croonian lecture in 1940. He retired from the chair of zoophysiology at the University of Copenhagen in 1945, and in the same year was awarded the Baly medal by the Royal College of Physicians. (*See* also *Encyclopædia Britannica.*)

Kuhn, Walt, U.S. painter (b. New York city, Oct. 27, 1877—d. New York city, July 13, 1949).

Ledbetter, Huddie ("Lead Belly"), U.S. Negro folk singer (b. Louisiana, 1889—d. New York city, Dec. 6, 1949).

Lee, Sydney, British painter, etcher and wood engraver (b. Manchester, Eng., 1866—d. London, Eng., Oct. 31, 1949).

Leech, Edward Towner, U.S. newspaper editor (b. Denver, Colo., June 17, 1892—d. Pittsburgh, Pa., Dec. 11, 1949).

Lefevre, Frederic, French author, editor and critic (b. 1889—d. Paris, Fr., Sept. 11, 1949).

Leiber, Fritz, U.S. actor (b. Chicago, Ill., Jan. 31, 1883—d. Pacific Palisades, Calif., Oct. 14, 1949), joined the theatrical company of Sir Philip Ben Greet at the age of 20 and for some time appeared also with the companies of Robert Mantell, David Warfield and Julia Marlowe. He made his motion picture debut in 1917, playing in *If I Were King*, *Antony and Cleopatra* and *The Queen of Sheba*. From 1920 to 1929 he toured with the Shakespearean Repertory company, and was later actor-director of the Chicago Civic Shakespeare society. He returned to the films in 1935 and appeared in *The Life of Louis Pasteur*, *A Tale of Two Cities* and *Anthony Adverse* among others.

Lenroot, Irvine Luther, U.S. senator and judge (b. Superior, Wis., Jan. 31, 1869—d. Washington, D.C., Jan. 26, 1949), entered politics in Wisconsin early in the 1890s and served six years in the state legislature, retiring after being defeated in the election for governor. He was admitted to the bar in 1897. He returned to political life in 1908 as a member of the national house of representatives, where he served until elected to the U.S. senate in 1918.

In the 1920 Republican national convention, after Warren G. Harding had been nominated for president, Senator Lenroot's name was proposed for vice-president, but western delegates started a convention landslide instead for Calvin Coolidge, who subsequently became president on Harding's death. Lenroot was defeated for re-election to the senate in 1926 and retired to private life, but was appointed to the U.S. court of customs and patent appeals in 1929, and served as a judge of that court until his resignation in 1944.

Leonard, Russell Henry, U.S. textile manufacturing executive (b. Somerset, Mass., Oct. 4, 1888—d. Brookline, Mass., Nov. 5, 1949).

Lerroux, Alejandro, Spanish republican leader (b. La Rambla, near Córdoba, Sp., 1864—d. Madrid Sp., June 27, 1949), was elected to the *cortes* in 1901 as deputy for Barcelona, and became known for his eloquent anticlericalism and republicanism. He spent a few years in Argentina, where he fled after his exile in 1907, but after World War I was allowed to return to Spain. He played a large part in creating the republic, and in 1931 became its first foreign minister. His progress toward the moderate centre was demonstrated by the composition of the four cabinets which he headed between 1933 and 1935. He fled from Spain on the eve of the civil war and lived for 11 years in Portugal. He was permitted to return in 1947. (*See* also *Encyclopædia Britannica.*)

Leverhulme, William Hulme Lever, 2nd Viscount, of the Western Isles, British industrialist (b. Bolton, Lancs., Eng., March 25, 1888—d. Minneapolis, Minn., May 26, 1949), was the only child of the 1st Viscount Leverhulme and was educated at Eton college and Trinity college, Cambridge. In order to gain experience in his father's business he began work as a labourer at Port Sunlight. On May 7, 1925, his father died and William Lever succeeded to the titles and became governor of Lever Brothers. In 1925 the firm had 250 associated companies in all parts of the world, but under his governorship its activities increased still further and in 1937 Lever Brothers amalgamated with Unilever Ltd., under the title Lever Brothers and Unilever Ltd. He was president of many important organizations, including the London Chamber of Commerce (1931–34); Advertising association (1931); Institution of Chemical Engineers (1932–34), and the Royal Warrant Holders' association (1933). He was high sheriff of Cheshire in 1923 and charter mayor of Bebington, Cheshire, in 1937. From 1932 to 1936 he was a pro-chancellor of Liverpool university. He was returning from a business visit to Australia when he died in a hospital at Minneapolis, Minn. His life of his father, *Viscount Leverhulme by His Son*, was published in 1927.

Lewis, Lloyd Downs, U.S. author, historian and newspaper editor (b. Pendleton, Ind., May 2, 1891—d. Libertyville, Ill., April 21, 1949), was graduated from Swarthmore college in 1913, and began work as a reporter on the *Philadelphia American*. In 1915 he went to Chicago as a member of the staff of the old *Record-Herald*. In 1917–18 he served in the navy, and from 1919 until 1930 was a theatrical publicity agent. He was named drama critic of the *Chicago Daily News* in 1930, and later became that paper's sports editor and finally its managing editor. Meantime he had published *Sherman, Fighting Prophet*, and *Myths After Lincoln*. He also collaborated with Henry Justin Smith on *Chicago—The History of Its Reputation*, and *Oscar Wilde Discovers America*. He collaborated with Sinclair Lewis on a play, *The Jayhawker*.

In 1945 he retired, but continued to write a weekly column on literature for the *Chicago Sun-Times*, while preparing the manuscript of a life of Gen. U. S. Grant, of which he had virtually completed the first volume at the time of his death.

Lewis, Roberto, Panaman painter and sculptor (b. Panamá, Pan., Sept. 30, 1874—d. Panamá, Sept. 22, 1949).

Lewis, William Draper, U.S. lawyer, educator and author (b. Philadelphia, Pa., April 27, 1867—d. Northeast Harbor, Me., Sept. 2, 1949).

ondonderry, Charles Stewart Henry Vane-Tempest-Stewart, 7TH MARQUESS OF (b. London, Eng., May 13, 1878—d. Newtownards, County Down, N.Ire., Feb. 11, 1949), was educated at Eton college and the Royal Military college, Sandhurst, and served in World War I as second in command of his regiment, the royal horse guards. He had been Conservative member of parliament for Maidstone from 1906 until he entered the house of lords on the death of his father in 1915. In 1917-18 he represented Ulster in the Irish convention. In 1920 he became undersecretary for air but resigned his office to return to Northern Ireland as minister of education and leader of the senate in the newly formed government. From 1928 to 1929 he was first commissioner of works and after the fall of the Labour government in 1931 he became minister for air. In June 1935 he was appointed lord privy seal and leader of the house of lords, but was dropped from the government when it was reformed after the general election in Nov. 1935. His book *Ourselves and Germany*, published in 1938, was the result of two visits to that country in 1936. In July 1942 he became regional commandant of the air training corps in Northern Ireland. His book *Wings of Destiny* (1943) defended his record as minister for air. (*See* also *Encyclopædia Britannica.*)

ong, John D., U.S. public health expert (b. Mt. Pleasant, Pa., Feb. 12, 1874—d. Guayaquil, Ec., Sept. 18, 1949).

otka, Alfred James, U.S. mathematician, expert on population trends (b. Lemberg, Aus., March 2, 1880—d. Red Bank, N.J., Dec. 5, 1949).

ouis II, PRINCE OF MONACO (b. July 12, 1870—d. Monaco, May 9, 1949), distinguished himself in his youth as a soldier, serving in the French Foreign Legion in Africa and also as a cavalry commander of the French army in World War I. In all he served for 30 years in French uniform, rising to the rank of brigadier general. He succeeded his father, Albert I, on June 26, 1922, as chief of the tiny state, which is renowned principally as the site of the famous Monte Carlo gambling casino. He was sometimes referred to as an absentee ruler by his subjects, because he preferred to live in France, and at least one riotous outburst of discontent among the people was attributed to this fact. Five days before his death he turned over his duties to his grandson, Prince Rainier, who succeeded him.

uden, William H., U.S. candy manufacturer (b. Reading, Pa., March 5, 1859—d. Atlantic City, N.J., May 8, 1949), began making penny candies in his mother's kitchen as a boy, and peddled them in the streets and factories of his home community. He soon developed a sufficient number of customers to open a small factory and employ salesmen. After a shipment of candy had been returned unsold, he conceived of the idea of melting the sweets down and adding a menthol flavour. He thus developed the cough drop that made him a fortune, selling more than 15,000,000 packages in 1925. In 1926 he retired as president of William H. Luden, Inc., and on Jan. 1, 1928, sold his factories and interests in the company to Food Industries, Inc., for a reported $6,500,000.

ussan, Zélie de, U.S.-born opera singer (b. Brooklyn, N.Y., Dec. 21, 1863—d. London, Eng., Dec. 18, 1949).

ynd, Robert, British writer (b. Belfast, Ire., April 20, 1879—d. London, Eng., Oct. 6, 1949), was graduated from Queen's college (now university), Belfast, in 1899 and became a literary journalist. His earliest book, *Irish and English: Portraits and Impressions* (1908), was the first of numerous collections of articles and reviews. He went to England in 1901 and worked as a dramatic critic, book reviewer and essayist. In 1908 he joined the *London Daily News* and two years later became its literary editor and that of its successor, the *London News Chronicle*, until his death. He contributed essays to the *New Statesman and Nation* for many years, over the signature "Y. Y." Among his earlier works were anecdotal volumes on Ireland, afterward succeeded by works of literary criticism, such as *The Art of Letters* (1921) and *Dr. Johnson and Company* (1928); and volumes of graceful, perceptive essays, notable among which were *The Pleasures of Ignorance* (1921), *Life's Little Oddities* (1941) and, his last, *Things One Hears* (1945).

yon, D. Willard, U.S. clergyman, founder of Y.M.C.A. in China and Korea (b. Chekiang province, China, 1879?—d. Claremont, Calif., March 16, 1949).

ytton, Henry Charles, U.S. merchant (b. New York, N.Y., July 13, 1846—d. Chicago, March 31, 1949), was the last surviving pioneer merchant of Chicago's State street shopping centre. The son of a shirt manufacturer, he attended the City College of New York, began work as an errand boy and dry-goods clerk. In 1865 he and a brother opened a clothing store in Ionia, Mich. It failed, but Lytton repaid all creditors over the ensuing 20 years. After other ventures in the clothing trade, he leased a Chicago Loop site for a store, opening it in 1887 under the name of The Hub. He retired in 1916 turning the company over to a son, but returned to the business when the latter died in 1933, and remained its head until his death.

MacArthur, Mary, U.S. actress, daughter of Helen Hayes and Charles MacArthur (b. Feb. 1930—d. New York city, Sept. 22, 1949).

McClure, Samuel Sidney, U.S. author and publisher (b. County Antrim, Ire., Feb. 17, 1857—d. New York, N.Y., March 21, 1949), spent his boyhood in Indiana, worked his way through Knox college in Galesburg, Ill., then went to Boston and began editing a magazine for cyclists. With little capital, but assured of his own literary judgment, he founded a distributing syndicate, buying stories from promising authors and selling serial rights to various newspapers. In this way he introduced, or popularized in the United States, such authors as Rudyard Kipling, A. Conan Doyle, Robert Louis Stevenson, William Dean Howells and Mark Twain. In 1893 he began publishing *McClure's Magazine*, which quickly became one of the most famous journals of its day, being especially renowned for the muckraking articles of such feature writers as Lincoln Steffens and Ida M. Tarbell. He published the first manuscripts of many famous authors, among them Willa Cather. He retired from active direction of both his syndicate and his magazine in 1914, and in that same year published his autobiography. He came out of retirement on other occasions—once to edit the *New York Evening Mail*, and once to sponsor a short-lived revival of his magazine. During the 1930s he published several volumes on political philosophy.

McCutcheon, John Tinney, U.S. newspaper correspondent and cartoonist (b. near South Raub, Ind., May 6, 1870—d. Lake Forest, Ill., June 10, 1949), was graduated from Purdue university in 1889, and soon after joined the staff of the old *Chicago Record*, later the *Record-Herald*. His cartoons became a front-page feature of the paper, especially his political cartoons which concerned the 1896 presidential campaign. He produced in all more than 10,000 cartoons, many of them marked by the laconic humour reminiscent of his native Indiana. McCutcheon also served long periods as foreign correspondent and war correspondent. He was with Admiral Dewey during the battle of Manila bay; served as a correspondent during the Filipino insurrection and the Boer War; hunted big game in Africa with Carl Akeley, and travelled with Theodore Roosevelt's African safari, besides covering for his paper the punitive U.S. expedition into Mexico in 1916. As staff cartoonist of the *Chicago Tribune* he was generally acknowledged to be dean of his profession. His most famous cartoon, "Injun Summer," has appeared by request annually in the *Tribune* since 1912, and he was awarded the Pulitzer prize for cartoons in 1932.

Mackenzie, Ian Alistair, Canadian lawyer, political leader (b. Assunt, Sutherland Co., Scot., July 27, 1890—d. Banff, Alta., Sept. 2, 1949).

McKinstry, Helen (May), U.S. educator, Y.W.C.A. leader (b. Winnebago, Minn., May 27, 1878—d. Troy, N.Y., June 11, 1949).

McMahon, (Arthur) Henry, British soldier and administrator (b. Nov. 28, 1862—d. London, Eng., Dec. 29, 1949).

McMein, Neysa (MRS. JOHN GORDON BARAGWANATH), U.S. artist and illustrator (b. Quincy, Ill., Jan. 25, 1890—d. New York, N.Y., May 12, 1949), studied at the Art Institute of Chicago, and began her career sketching hats for a manufacturer. In 1913 she sold her first fashion drawing, and in 1915 sold her first cover to the *Saturday Evening Post*. She later designed covers and illustrations for the *Woman's Home Companion, Collier's, McCall's* and other magazines. She specialized in studies of pretty girls, and was credited with creating a vogue for a feminine type called the "McMein girl." She also painted portraits of many prominent persons, including President Warren G. Harding, Chief Justice Charles Evans Hughes, Charles Chaplin, Jack Dempsey, Jascha Heifetz, Beatrice Lillie and others.

McMurray, Thomas Porter, British orthopaedic specialist (b. Belfast, Antrim, Ire., Dec. 5, 1887—d. London, Eng., Nov. 16, 1949).

McMurtrie, Francis Edwin, British editor of *Jane's Fighting Ships* (b. London, Eng., April 8, 1884—d. Hoddesdon, Herts., Eng., Feb. 22, 1949).

MacNaughton, James, Canadian-born mining executive (b. Bruce Mines, Ont., March 9, 1864—d. Calumet, Mich., May 26, 1949).

Maeterlinck, Count Maurice Polydore Marie Bernard, Belgian writer (b. Ghent, Belg., Aug. 29, 1862—d. Nice, Fr., May 6, 1949). (*See* biography in *Encyclopædia Britannica*).

Magonigle, Edith Marion Day, U.S. painter and sculptor (b. Brooklyn, N.Y., May 11, 1877—d. New York city, Aug. 8, 1949).

Mahmoud, Ali, Arabic poet (b. 1897?—d. Cairo, Egy., Nov. 17, 1949).

Mahon, William D., U.S. labour leader (b. Athens county, O., 1861—d. Detroit, Mich., Oct. 31, 1949).

Maitland, Sir Adam, British industrialist (b. Bury, Lancs., Eng., May 25, 1885—d. Henley-on-Thames, Oxon., Eng., Oct. 5, 1949).

Malvy, Louis Jean, French politician (b. Figeac, Fr., Dec. 1, 1875—d. Paris, Fr., June 9, 1949), entered the chamber of deputies in 1906 as a Socialist-Radical and, in June 1914, became minister of the interior. He acquired notoriety during World War I when Georges Clemenceau on July 22, 1917, charged him with laxity in dealing with defeatists and revolutionaries. Following his resignation on Aug. 31, 1917, he was accused of treason and on Aug. 6, 1918, was found guilty of culpable negligence. Sentenced to five years' banishment, he passed the time in Spain. In 1924 he was helped by the Radical party and the French Freemasonry to re-election to the chamber of deputies and two years later he became again, for a few weeks, minister of the interior in an Aristide Briand cabinet. Re-elected in 1928, 1932 and 1936, he was among the deputies who, on July 10, 1940, at Vichy, voted for the abolition of the republican constitution. For this action he was excluded from the Radical party after the liberation. (*See* also *Encyclopædia Britannica.*)

Mann, Klaus, German-born author (b. Munich, Ger., Nov. 18, 1906—d. Cannes, Fr., May 21, 1949).

Manning, William Thomas, U.S. clergyman, retired bishop of the Protestant Episcopal diocese of New York (b. Northampton, Eng., May 12, 1866—d. New York city, Nov. 18, 1949), was taken to the U.S. as a boy, reared in California and graduated from the University of the South at Sewanee, Tenn. He became an Episcopal priest and was made rector of a church at Redlands, Calif. In 1896 he became rector of a church in Landsdowne, Pa.; in 1898 rector of Christ church, Nashville, Tenn.; and in 1903 vicar of St. Agnes' chapel of Trinity parish in New York. In 1908 he became rector of Trinity church and head of Trinity parish, the wealthiest individual religious corporation in the country. In 1918 he served as an army chaplain, and in Dec. 1920 was elected successor on the death of Bishop Charles Sumner Burch. Bishop Manning was the centre of several controversies during his episcopate, in all of which he defended his conservatism with vigour. He especially defended the sanctity of the marriage contract against advocates of easy divorce and "companionate" marriage. His monument was the massive Cathedral of St. John the Divine on Morningside drive in New York. It was begun in 1892, the year he became a priest, and was not completed at the time of his death; but through the many millions he had raised for its construction, he had shepherded the work to the point where its ultimate design could be visualized. He retired Dec. 31, 1946.

Marchant, Sir Stanley, British professor of music (b. London, Eng., May 15, 1883—d. London, Feb. 28, 1949).

Mardrus, J. C., French orientalist (b. Claire, Fr., 1868—d. Paris, Fr., March 27, 1949).

Marlin, Mahlon Henry, U.S. firearms manufacturer (b. Windsor Locks, Conn.,

1949 OBITUARIES: Frank Murphy, U.S. jurist; José Clemente Orozco, Mexican painter; Laszlo Rajk, Hungarian government official; Robert L. Ripley, U.S. cartoonist; Bill Robinson, U.S. tap dancer

1864?—d. New Haven, Conn., Sept. 14, 1949).

Marmaggi, Francesco, CARDINAL, Italian prefect of the Congregation of the Council (b. Rome, It., Aug. 31, 1876—d. Rome, Nov. 3, 1949).

Marshall, Robert Bradford, U.S. former chief geographer for geological survey (b. 1866?—d. San Francisco, Calif., June 21, 1949).

Martin, John, South African newspaper and gold-mining executive (b. Stirling, Scot., April 19, 1884—d. Johannesburg, U. of S.Af., March 28, 1949).

Matsudaira, Tsuneo, Japanese diplomat (b. Tokyo, Jap., April 17, 1877—d. Tokyo, Nov. 14, 1949), was educated at the Imperial University of Tokyo, and in 1902 entered the foreign service. He was assigned to Peiping, China, and five years later to London. Recalled to Tokyo in 1910, he was named consul general at Tientsin, China, where he served during World War I. When U.S. and Japanese troops occupied Vladivostok, Russia, in 1918–19, he served as Japanese high commissioner to Siberia, and participated in discussions leading to the Japanese evacuation of Russian territories. In 1920 he was named chief of the American and European section of the Japanese foreign office, and in 1923 vice-minister for foreign affairs. He was ambassador to the United States, 1925–28, and ambassador to London, 1929–36. He headed the Japanese delegation to the general disarmament conference at Geneva in 1932, and in 1934 presented Japan's intention to abandon naval limitation and build up to parity with Britain and the U.S. He was cleared of responsibility for Japan's aggressions during World War II, after the U.S. occupation of Japan, and in May 1947 was elected first president of the house of councillors, the upper house of the diet. He had served as imperial household minister from 1936 to 1945, when he reportedly resigned because he held himself responsible for partial destruction by fire of the imperial palace during U.S. bombing raids. (*See* also *Encyclopædia Britannica.*)

Mead, George Jackson, U.S. aeronautical engineer and industrialist (b. Everett, Mass., Dec. 27, 1891—d. West Hartford, Conn., Jan. 20, 1949), studied at the Massachusetts Institute of Technology and in 1916 joined the Wright Martin Aircraft corporation at New Brunswick, N.J., as an experimental engineer. In 1919 he was named experimental engineer in charge of the power-plant laboratories of the U.S. air services at Dayton, O., and from 1920 to 1925 was chief engineer of the Wright Aeronautical corporation. In 1925 he helped found the Pratt & Whitney Aircraft company, which later was the United Aircraft corporation, continuing with that firm until his retirement as vice-president, director and member of the executive committee in 1939. In 1925 he had directed the design and development of the first Wasp engine, and successors to this engine powered almost half the U.S. planes used in World War II.

Mead, Gilbert Wilcox, U.S. educator (b. Pittsburgh, Pa., May 7, 1889—d. Chestertown, Md., March 25, 1949).

Meek, Alexander, British zoologist (b. Boughty Ferry, Eng., April 7, 1865—d. London, Eng., Nov. 4, 1949).

Melchett, Henry Mond, 2ND BARON, British industrialist and Zionist leader (b. London, Eng., May 10, 1898—d. Miami Beach, Fla., Jan. 22, 1949).

Mellon, William Larimer, U.S. oil industrialist (b. Pittsburgh, Pa., 1868?—d. Pittsburgh, Oct. 8 1949).

Menzies, Sir Frederick Norton Kay, British physician, public health officer (b. Nov. 2, 1875—d. London, Eng., May 14, 1949).

Miller, Bert H(enry), U.S. senator (b. St. George, Utah, 1877?—d. Washington, D.C., Oct. 8, 1949).

Mitchell, Margaret (MRS. JOHN R. MARSH), U.S. author (b. Atlanta, Ga., 1900?—d. Atlanta, Aug. 16, 1949), was a member of a long-established Atlanta family, and it was in part from her father, an attorney and one-time head of the Atlanta Historical society, that she learned some of the details of the post-Civil War reconstruction period that she incorporated in her famous novel, *Gone with the Wind.* She spent one year at Smith college, Northampton, Mass., and then worked on the *Atlanta Journal* from 1922 to 1926. *Gone with the Wind* was published in 1936, and it ultimately became one of the best-selling books of all time. By early 1949, 8,000,000 copies had been sold in 40 countries, and 50,000 copies were still being sold annually in the United States. It had been translated into 30 languages. The motion-picture version of the book became one of the most popular of all Hollywood productions, and the book itself was awarded the Pulitzer prize in 1937. The author, who said that the renown of the novel had kept her so occupied with engagements that she had never had the opportunity even to begin a second book, was struck by an automobile and fatally injured while crossing a street in Atlanta.

Mittelhauser, Eugene-Désiré-Antoine, French army officer (b. Tourcoing, Fr., 1873—d. Paris, Fr., Dec. 21, 1949).

Moffatt, Fred Cushing, U.S. stockbroker (b. New York city, Oct. 16, 1889—d. Brooklyn, N.Y., Dec. 16, 1949).

Molony, Sir Thomas Francis, Irish jurist (b. Dublin, Ire., Jan. 31, 1865—d. London, Eng., Sept. 3, 1949).

Monvel, Bernard Boutet de, French portrait painter (b. Paris, Fr., Aug. 10, 1884—d. São Miguel Island, Azores, Oct. 28, 1949).

Moore, Sir Frederick William, Irish botanist (b. Sept. 3, 1857—d. Dublin, Ire., Aug. 24, 1949).

Mora, José de la, Mexican industrialist (b. Gómez Palacio, Durango, Mex., Dec. 31, 1892—d. Dallas, Tex., Nov. 29, 1949).

Morahan, Eugene H., U.S. sculptor (b. Brooklyn, N.Y., Aug. 29, 1869—d. Santa Monica, Calif., Nov. 14, 1949).

Moran, Charles B., U.S. athlete and baseball umpire (b. Nashville, Tenn., Feb. 22, 1879—d. Horse Cave, Ky., June 14, 1949).

Moran, George (GEORGE SEARCY), U.S. stage and motion-picture comedian (b. Elwood, Kan., Oct. 3, 1882—d. Oakland, Calif., Aug. 1, 1949), began his stage career with a travelling company playing *Uncle Tom's Cabin,* learned vaudeville routines, and began a song-and-dance act in vaudeville on the Pacific coast. There he met Charles E. Mack, and the two appeared together in New York, though in separate acts, in a 1917 revue *Over the Top.* When that show closed they formed, at Mack's suggestion, a blackface team, and won immediate popularity as the "Two Black Crows." They were starred in several editions of the *Earl Carroll Vanities, Ziegfeld Follies* and George White's *Scandals.* During the 1920s and 1930s they were immensely popular as recording stars, and were among the first nationally renowned radio performers. They also appeared in successful motion pictures, including *Why Bring That Up?* in 1929 and *Hypnotized* in 1932. Mack was killed in an automobile accident in 1934, and Moran withdrew from the theatre for a time, but returned to perform the blackface act with others.

Morgan, Frank (FRANCIS PHILIP WUPPERMANN), U.S. stage and screen star (b. New York, N.Y., June 1, 1890—d. Beverly Hills, Calif., Sept. 18, 1949), was the son of George Wuppermann, who held and passed on to his family the distribution rights in the U.S. to the angostura bitters. After attending Cornell university, Ithaca, N.Y., for a time, he went to New Mexico, where he was a cowhand on a ranch near Las Vegas. His brother Ralph, already on the stage, persuaded him to try acting, and Frank began in stock company in 1914, achieving some fame by 1923. As the duke of Florence in *The Firebrand,* in 1924, he became firmly established, and the title role of *Topaze* (1930) brought him to the attention of Hollywood. He appeared in scores of films, mostly in comedy roles, including *Naughty Marietta, Reunion in Vienna, The Great Ziegfeld, The Last of Mrs. Cheyney, Rosalie, Sweethearts, Broadway Serenade, The Wizard of Oz, Tortilla Flat, The Three Musketeers, Green Dolphin Street, The Stratton Story* and *Any Number Can Play.*

Morgan, William Gerry, U.S. physician, former president of A.M.A. (b. Newport, N.H., May 2, 1868—d. Washington, D.C., July 7, 1949).

Morrison, Frank, U.S. labour leader (b. Franktown, Ont., Nov. 23, 1859—d. Washington, D.C., March 12, 1949).

Morrow, Walter Alexander, U.S. retired newspaper editor (b. Crawfordsville, Ind., March 25, 1894—d. Oklahoma City, Okla., July 14, 1949).

Mulholland, Frank L., U.S. labour lawyer (b. Disco, Mich., April 20, 1875—d. Lake Placid, N.Y., June 7, 1949).

Munthe, Axel Martin Fredrik, Swedish physician and author (b. Oskarshamn, Swed., Oct. 31, 1857—d. Stockholm, Swed., Feb. 11, 1949), was educated at the University of Uppsala; he later worked for some time under Jean M. Charcot at the Salpêtrière in Paris, France. After quarrelling with Charcot and leaving the Salpêtrière, he conducted fashionable medical practices first in Paris and then in Rome, Italy, where he lived in Keats's house. He built his villa of San Michele on the highest point of the island of Capri and created a bird sanctuary there. *The Story of San Michele,* the memoirs of a life full of incident, was written in English and published in 1929. It had an outstanding success and was later translated into almost every literary tongue. He spent his last years as a guest of the king of Sweden in the royal palace in Stockholm.

Murdock, James, Canadian statesman and labour leader (b. Brighton, Eng., Aug. 15, 1871—d. Guelph, Ont., May 16, 1949), worked as a trainman from 1890 to 1905, when he became Canadian vice-president of the Brotherhood of Railway Trainmen, a position he held until 1921. In that year he resigned to become minister of labour in the Liberal government of W. L. Mackenzie King. Defeated for re-election to the house of commons in Toronto High Park in 1925, he was re-elected to his post with the trainmen and held that position until 1933. He represented Ontario in the Canadian upper house after 1930.

Murphy, Frank, U.S. jurist (b. Harbor Beach, Mich., April 13, 1890—d. Detroit, Mich., July 19, 1949), was graduated in law from the University of Michigan in 1914 and did postgraduate work at Lincoln's Inn, London and Trinity college, Dublin. He served as a captain in World War I, after which he opened a law office in Detroit, and entered politics in 1919 as chief assistant United States attorney for the eastern district of Michigan. He served as judge of the Detroit recorder's court, 1923–30; mayor of Detroit, 1930–33; governor-general of the Philippines, 1933–35, and, when the Philippines became a commonwealth Nov. 15, 1935, for a ten-year trial period, first high commissioner. In 1936 he was elected governor of Michigan. He was a confirmed liberal, and demonstrated his liberal attitude toward labour during the critical automobile workers' strike in Michigan in 1937. In Jan. 1939, President Franklin D. Roosevelt nominated him U.S. attorney general.

In this capacity Murphy actively prosecuted both business and labour leaders charged with violations of antitrust laws, and sponsored the investigations that led to the end of the Pendergast machine's rule in Kansas City, Mo. He was appointed to the U.S. supreme court in Jan. 1940, and served as associate justice of that court until his death. (*See* also *Encyclopædia Britannica.*)

Naiditch, Isaac, Russian-born industrialist, Zionist leader (b. Pinsk, Russia, 1868—d. Paris, Fr., Dec. 22, 1949).

Naidu, Sarojini, Indian Nationalist leader, poetess and orator (b. Hyderabad, India, Feb. 13, 1879—d. Lucknow, India, March 2, 1949). (For her early career, see *Encyclopædia Britannica.*) In 1925 she became the first Indian woman to preside over the Indian National Congress. She accompanied Mohandas Karamchand Gandhi to the Round Table conference in London, England, in 1931, but on her return to India was imprisoned for her part in the civil disobedience movement. She was again imprisoned in 1942. The Asian Relations conference of 1947 was presided over by her, and in the same year, after the advent of independence, she became governor of the United Provinces, a post she held until her death.

Neveu, Ginette, French violinist (b. Paris, Fr., Aug. 11, 1919—d. Algarvia peak, Azores, Oct. 28, 1949).

Newberry, Percy Edward, British-born Egyptologist (b. April 23, 1869—d. Hascombe, near Godalming, Sur., Eng., Aug. 7, 1949), was educated at King's college, London, and began the study of Egypt in 1884. In 1890 he became officer in charge of the Archaeological Survey of Egypt of the Egypt Exploration Fund. From 1895 to 1901 he undertook the survey of the necropolis at Thebes, and then served on the staff of the Catalogue Général of the Services des Antiquités of the Cairo museum. He was Brunner professor of Egyptology in the University of Liverpool, 1906–19, and from 1929 to 1933 professor of ancient Egyptian history and archaeology in the University of Egypt, Cairo. He was a member of the group under Howard Carter who in 1922 discovered the tomb of Tutenkhamon, and five years later explored the Gebel Elba region of the Red sea province of the Sudan. He wrote many books on ancient Egypt, his best known being *Five Years' Explorations at Thebes* (1912), produced in collaboration with Lord Caernarvon and Howard Carter.

Newbold, Fleming, U.S. publisher (b. Dayton, O., April 11, 1873—d. Washington, D.C., Jan. 31, 1949).

Newte, Horace Wykeham Can, British author, playwright (b. 1870—d. London, Eng., Dec. 30, 1949).

Nicholson, Sir William Newzam Prior, British painter (b. Newark-on-Trent, Eng., 1872—d. Blewbury, Berks, Eng., May 16, 1949), educated at the Magnus school, Newark-on-Trent, he studied in London and Paris. He attracted considerable attention when, together with his brother-in-law James Pryde, he produced a series of posters under the pseudonym of the Beggarstaff Brothers. Although he also designed woodcuts and stained glass, his more serious work is found in his painting. His "Portrait of Queen Victoria" is a delightful coloured wood engraving. He was knighted in 1936. Examples of his work are to be found in the Tate gallery, London, of which he was a trustee, 1934–39, and also in the Fitzwilliam museum, Cambridge, Eng., the Luxembourg palace, Paris, and several British municipal galleries.

Nintchitch, Momtchilo, Yugoslav government leader (b. Belgrade, Yugos., 1876—d. Lausanne, Switz., Dec. 23, 1949).

Novak, Vitezslav, Czech composer (b. Kamenice-on-Lipa [Kamenitz], Bohem., Dec. 5, 1870—d. Prague, Czech., July 18, 1949).

O'Briain, Art Patrick, Irish diplomat (b. 1872—d. Dublin, Ire., Aug. 12, 1949).

Odell, George Clinton Densmore, U.S. authority on dramatic literature (b. Newburgh, N.Y., March 19, 1866—d. New York city, Oct. 17, 1949).

O'Doherty, Michael J., Roman Catholic archbishop of the Philippines (b. Charlestown, Co. Mayo, Ire., July 30, 1874—d. Manila, Phil., Oct. 14, 1949).

Ogilvie, Sir Frederick Wolff, British scholar and public servant (b. Valparaiso, Chile, Feb. 7, 1893—d. London, Eng., June 10, 1949).

Olander, Victor A., U.S. trades-union leader (b. Chicago, Ill., Nov. 28, 1873—d. Chicago, Feb. 5, 1949).

O'Laughlin, John Callan, U.S. publisher (b. Washington, D.C., Jan. 11, 1873—d. Washington, D.C., March 14, 1949).

O'Neill, Charles, U.S. coal industry spokesman (b. near Clearfield, Pa., June 25, 1887—d. New Rochelle, N.Y., Feb. 28, 1949), began working in the coal mines as a boy of 11. He was assistant secretary of District No. 2 of the United Mine Workers of America, 1908–16, and vice-president of that organization, 1916–18. He helped form the Central Pennsylvania Coal Producers association and was its secretary from 1918 to 1930. He was vice-president of the coal firm of Peale, Peacock and Kerr, Inc., of New York city from 1930 to 1934, and its president from 1934 until his death. He became spokesman for the Eastern Pennsylvania Coal Operators association in 1933, and after that date was prominent in annual negotiations with John L. Lewis of the United Mine Workers union over wages, hours and working conditions in the mines. O'Neill served as a member of the Solid Fuels Advisory council during World War II.

Orozco, José Clemente, Mexican painter (b. Zapotlán, Mex., Nov. 23, 1883—d. Mexico City, Mex., Sept. 7, 1949), lost his left hand in a childhood accident, but the handicap never interfered with his artistic ability. He studied at the National University of Mexico, Mexico City, and learned architectural drawing at the National Academy of Fine Arts, after which he became an architect's draftsman. He began painting seriously in 1913 and presented his first exhibition in Mexico City in 1915. His murals adorn many public buildings in the United States, as well as in Mexico. Among his famous works are the decorations of the National Preparatory school in Mexico, and murals at Pomona college, Claremont, Calif., at the New School for Social Research in New York city and at Dartmouth college, Hanover, N.H.

Osborn, Chase Salmon, U.S. author, publisher and political leader (b. Huntington county, Ind., Jan. 22, 1860—d. Poulan, Ga., April 11, 1949), worked successively in his youth as a newspaper boy, typesetter, mill hand, rail splitter and bellboy. He received his B.S. from Purdue university, West Lafayette, Ind., in 1880. Osborn realized great wealth from his discovery of the Michipicoten and Moose mountain iron ranges in Canada, as well as other ranges in Lapland, Africa, the orient and Latin America. In the 1880s he became a newspaper publisher at Florence, Wis., and subsequently owned the Sault Ste. Marie, Mich., *News* and was city editor of the *Milwaukee Sentinel.* He was governor of Michigan from 1911 to 1913 and actively supported both Theodore and Franklin D. Roosevelt. He was a regent of the University of Michigan. Among his books were *Madagascar; the Land of the Man-Eating Tree* (1924) and *Song of Hiawatha; Hiawatha with Its Original Indian Legends* (with Stellanova Osborn) (1944).

Ouspenskaya, Maria, U.S. actress (b. Tula, near Moscow, Russia, July 29, 1887—d. Hollywood, Calif., Dec. 3, 1949).

Owens, Clarence ("Brick"), U.S. baseball player and umpire (b. Milwaukee, Wis., 1885—d. Chicago, Nov. 11, 1949).

Pares, Sir Bernard, British historian (b. England, March 1, 1867—d. New York, N.Y., April 17, 1949), was educated at Harrow school and Trinity college, Cambridge university. He had a knowledge, unrivalled in his own country, of prerevolutionary Russia which he visited for the first time in 1898. On his second visit, in 1906, Pares met many of the important figures of the second *duma* which was at that time meeting in St. Petersburg. *Russia and Reform* (1907) was the fruit of his experiences. In 1906 he had been appointed reader in Russian history, and from 1908 to 1917 he was professor of Russian history, language and literature in the University of Liverpool. During World War I he was attached to the Russian army as official British observer, and in 1917 he joined the staff of the British ambassador in Petrograd. In 1919 he was appointed to a chair of Russian at London university, and three years later he became, in addition, the first director of the school of Slavonic and east European studies. In 1926 his distinguished verse translation of Ivan A. Krylov's fables appeared. During World War II he lectured in the U.S. for the British ministry of information, and his book *Russia* in the Penguin series enjoyed wide sales in both Great Britain and the United States. Several visits to soviet Russia had made him critical of the regime, which he saw in his *My Russian Memoirs* from the standpoint of the prerevolutionary Liberals, but in 1936 he visited Russia once more and recorded in *Moscow Admits a Critic* opinions which were not unfavourable to it.

Parker, George B., U.S. newspaper editor (b. Ithaca, Mich., Sept. 10, 1886—d. Washington, D.C., Oct. 10, 1949), studied at the University of Oklahoma, Norman, Okla., and from 1909 to 1920 was on the *Oklahoma News*, successively as reporter, city editor, managing editor and editor. From 1920 to 1922 he edited the *Cleveland Press*, then served for two years as editor in chief of the southwestern group of papers of the Scripps-Howard chain. For the last 22 years of his life he was editor in chief of the entire chain of papers. He won a Pulitzer prize for the excellence of his editorials in 1936.

Peet, Max Minor, U.S. neurosurgeon (b. Iosco, Mich., Oct. 20, 1885—d. Ann Arbor, Mich., March 25, 1949).

Pender, John Cuthbert Denison Denison-Pender, 1st Baron of Porthcurnow, British wireless and cable executive (b. May 11, 1892—d. London, Eng., Dec. 4, 1949).

Perali, Pericle, Italian archaeologist, political leader (b. Orvieto, It., July 20, 1884—d. Rome, It., Dec. 30, 1949).

Perrine, George, U.S. engineer (b. Milwaukee, Wis., Jan. 11, 1871—d. New York, N.Y., Jan. 18, 1949).

Perry, K. M., Canadian engineer and brigadier (b. Macleod, Alta., 1885—d. Montreal, Que., May 3, 1949), received his civil engineering degree from McGill university, Montreal, and in 1909 began working for a Montreal engineering company. In 1912 he joined the Lake Superior corporation. During World War I, he became a lieutenant colonel and led the 13th battalion of the Black Watch Royal Highlanders of Canada into Germany. After the war he attended the Imperial Staff college at Cambridge; served as general staff officer at Winnipeg, Man.; taught military tactics at the Royal Military college, Kingston, Ont.; and for four years was general staff officer at Montreal. In 1928 he went on the reserve and became assistant to the general manager of the Beauharnois Power corporation until 1932, when he was appointed a member of the unemployment commission. In 1940 he was elected president of the Quebec division of the Canadian Red Cross society.

Pew, Gertrude L. (Mrs. F. G. Robinson), U.S. portrait painter (b. Niles, O., March 25, 1876—d. New York city, June 28, 1949).

Peyton, Philip B., U.S. army officer (b. Nashville, Tenn., Jan. 22, 1881—d. Washington, D.C., June 24, 1949).

Pfister, Jean Jacques, Swiss-born painter (b. Hasle, Switz., July 10, 1878—d. New York city, June 7, 1949).

Pfitzner, Hans, German composer (b. Moscow, Russia, 1869—d. Salzburg, Aus., May 22, 1949).

Phillips, John Sanburn, U.S. publisher (b. Council Bluffs, Ia., July 2, 1861—d. Goshen, N.Y., Feb. 28, 1949), was graduated from Knox college, Galesburg, Ill., in 1882, and in that year entered the publishing field in Boston, Mass., with Samuel S. McClure. During the ensuing 24 yr., they, as partners, organized the S. S. McClure syndicate, perhaps the earliest modern newspaper feature syndicate, enlisting contributions from such writers as Mark Twain and Robert Louis Stevenson. In 1893 they founded *McClure's Magazine*, with Phillips as manager and treasurer, and later the McClure, Phillips and Co., Inc., book publishing firm, whose authors included Booth Tarkington, O. Henry and Ida Tarbell. In 1906 Phillips launched his own publishing company to produce the *American Magazine*, serving as its editor until 1915 and as its advisory editor from 1915 until 1938.

Pichetto, Stephen S., U.S. art restorer (b. New York, N.Y., 1888?—d. New York, Jan. 20, 1949).

Ponzi, Charles, Italian-born promoter (b. Parma, It., 1877?—d. Rio de Janeiro, Braz., Jan. 15, 1949), emigrated to Canada as a youth, and later to the U.S. In Boston, Mass., he organized an importing business and began a public promotion, claiming to double investors' money in 90 days. He declared that his promotion involved the use of investments to buy international postal union coupons throughout the world, taking advantage of favourable exchange rates. He was said to have attracted $15,000,000 in a few months of 1930. Charged with using the mails to defraud, he was declared bankrupt, and it was deduced that he had been paying off early investors with money sent in by later ones. After serving a jail term, he was deported to Italy, but he emigrated to Brazil shortly before the outbreak of World War II. He died in poverty.

Pool, Eugene Hillhouse, U.S. surgeon (b. New York city, June 3, 1874—d. Locust Valley, L.I., N.Y., April 9, 1949).

Pope-Hennessy, Dame Una, British writer (b. 1876—d. London, Eng., Aug. 16, 1949).

Portal, Wyndham Raymond Portal, 1st Viscount, of Laverstoke, British businessman and politician (b. April 9, 1885—d. Whitchurch, Hants., Eng., May 6, 1949).

Porter, Russell W., U.S. artist and astronomer (b. Springfield, Vt., 1872—d. Pasadena, Calif., Feb. 22, 1949).

Portnoff, Alexander, Russian-born sculptor (b. Russia, Jan. 1, 1887—d. Philadelphia, Pa., Dec. 20, 1949).

Potter, Thomas Albert, U.S. industrialist (b. Dresden, Ger., June 16, 1883—d. Philadelphia, Pa., Jan. 24, 1949).

Rabaud, Henri, French composer and conductor (b. Paris, Fr., Nov. 10, 1873—d. Paris, Sept. 12, 1949).

Rajk (Reich), Laszlo, Hungarian government official (b. Székely-Udvarhely [Odorhei], Transylvania, 1909—d. Budapest, Hung., Oct. 15, 1949). As a student at Budapest university he joined the illegal Communist party in 1930 and was arrested the following year. In 1936 he fought in the Spanish civil war and early in 1939 was interned in France. In 1941 the Germans allowed him to return to Hungary, where he was arrested and sentenced to a short term of imprisonment. In Oct. 1944 he was again arrested but, freed after World War II, became influential in the reorganized Hungarian Workers' (Communist) party. He was minister of the interior from Feb. 1946 until he became minister of foreign affairs in Dec. 1948. On Feb. 1, 1949, he was appointed secretary general of the reorganized People's Independence front. He was arrested on May 16, after the elections, and on Sept. 10 his indictment was published in which he was accused of plotting to murder Matyas Rakosi and four other Communist leaders, and of spying for Marshal Tito and the U.S. military intelligence. It was also alleged that from 1931 he had been a Hungarian police agent. At his trial, which opened on Sept. 16, Rajk confessed to all the crimes of which he was accused, and he was hanged on Oct. 15.

Ramos, Arthur, Brazilian anthropologist (b. Pilar Alagoas, Braz., July 7, 1903—d. Paris, Fr., Oct. 31, 1949).

Ransom, William Lynn, U.S. lawyer (b. Harmony township, Chautauqua county, N.Y., June 24, 1883—d. Cambridge, Mass., Feb. 19, 1949).

Reed, Amy Louise, U.S. author and educator (b. New York, N.Y., Nov. 22, 1872—d. Poughkeepsie, N.Y., Jan. 24, 1949).

Reed, Clyde Martin, U.S. publisher and senator (b. Champaign county, Ill., Oct. 19, 1871—d. Parsons, Kan., Nov. 8, 1949), was educated in Kansas, served with the railway mail service from 1889 to 1910, becoming head of the railway adjustment division. He resigned in 1910 to become publisher of the *Parsons Sun* (Kan.). In 1912 he joined the Bull Moose movement in Kansas, and was active in his state's Republican politics until his death. His first political office was as secretary to Gov. Henry J. Allen in 1919. Four times he campaigned for the Republican nomination for governor of Kansas, being successful in 1928. He was defeated for renomination in 1930. In 1938 he was elected to the U.S. senate, and was re-elected in 1944. During his first term he opposed prewar defense appropriations bills, lend-lease and military spending. He won the displeasure of organized labour by calling for the open shop and a 48-hr. week before payment of overtime. A strong advocate of measures benefiting his home state, Senator Reed especially supported high prices for wheat and pork and bills to expedite shipping of farm commodities. He was co-author of the Reed-Bulwinkle act, which exempted railroads from the antitrust laws with respect to rate agreements approved by the interstate commerce commission, and which became law in 1948 over Pres. Harry S. Truman's veto.

Renard, Rosita (Mrs. Otto Stern), Chilean pianist (b. Santiago, Chile, Feb. 8, 1894—d. Santiago, May 24, 1949), attended the Conservatorio Nacional de Música at Santiago and later, beginning in 1930, was a member of the faculty there. She had studied at the Stern conservatory in Berlin, Germany, on a Chilean government scholarship, and won the Liszt medal. In 1916 she became a pupil at the Rochester, N.Y., Conservatory of Music, and in 1917 gave her first recital in New York city, which was highly praised. She played as soloist with the New York Philharmonic in 1921 and subsequently with the symphony orchestras of Boston, Chicago, St. Louis and other cities of the United States. She made two extended tours with the singer, Geraldine Farrar, and gave concerts in many countries.

Rentschler, Harvey Clayton, U.S. physicist (b. Hamburg, Pa., March 26, 1881—d. East Orange, N.J., March 23, 1949), graduated from Princeton university, Princeton, N.J., and received a Ph.D. from Johns Hopkins university, Baltimore, Md., in 1908. He spent nine years as professor of physics at the University of Missouri, Columbia, Mo., then joined the Westinghouse research laboratories in 1917, remaining with the company until his retirement in 1947. He was at that time director of the research division of Westinghouse's lamp division in Bloomfield N.J. He and his assistant refined the first pure uranium samples in 1922, while searching for better lamp filament material. For 20 yr. his laboratory was virtually the sole source of uranium for experimentation, and it was producing about eight ounces a day when Arthur H. Compton at the University of Chicago, Chicago, Ill., early in 1942 requested three tons of the material—intended (as was later known) for the initial atomic generator. Within a few months Rentschler's laboratory was turning out the metal at the rate of more than 500 lb. a day. His experiments were said to have sped production of the atomic bomb by at least a year. (*See* also *Encyclopædia Britannica.*)

Reynolds, Sidney Hugh, British geologist (b. Brighton, Eng., 1867—d. Clifton, Bristol, Eng., Aug. 22, 1949).

Richardson, Alfred Madeley, English-born organist and composer (b. Southend-on-Sea, Ess., Eng., June 1, 1868—d. New York city, July 23, 1949).

Richardson, George Burr, U.S. geologist (b. New York, N.Y., Aug. 21, 1872—d. Washington, D.C., March 18, 1949), graduated from Harvard university, Cambridge, Mass., in 1895 and received a Ph.D. from Johns Hopkins university, Baltimore, Md., in 1901. He became an expert on U.S. mineral resources, serving with the U.S. geological survey from 1900 to 1942, when he retired as senior geologist. During World War I he was geologist in charge of national petroleum resources. He was a member of numerous learned societies and author of several books on mineral resources.

Rintelen, Franz von, German naval officer and spy (b. Germany, 1884—d. London, Eng., May 30, 1949), was on the staff of the German admiralty when World War I broke out. He was sent to the United States to sabotage the dispatch of munitions to the Allies and was so successful that the British authorities determined to remove him. In 1915 a false message of recall caused Captain von Rintelen to cross the Atlantic and he was arrested on his way back to Germany when the Dutch ship in which he was travelling was in British waters. He was interned until the entry of the U.S. into the war when he was sent to that country and sentenced to imprisonment for espionage activities. He was pardoned by Pres. Woodrow Wilson in 1920 and later settled in England, publishing two books of reminiscences, *The Dark Invader* (1933) and *The Return of the Dark Invader* (1935). During World War II he was interned on the Isle of Man.

Ripley, Robert LeRoy, U.S. cartoonist (b. Santa Rosa, Calif., Dec. 25, 1893—d. New York, N.Y., May 27, 1949), began drawing at the age of 14, when he sold his first cartoon to the old *Life* magazine. He began newspaper work on the *San Francisco Bulletin* in 1909, transferred to the *San Francisco Chronicle*, and in 1913 went to work for the *New York Evening Globe*. He produced his first "Believe It or Not" cartoon in 1918, on a sports subject. He left the *Globe* for the *New York Evening Post*, and continued to produce cartoons that were eventually syndicated to about 30 papers. His work first won broad national recognition with the publication of the first "Believe It or Not" book in 1929. Subsequently King Features syndicate distributed his daily and Sunday panels to more than 300 newspapers throughout the world. He also developed motion-picture short subjects, and for years conducted a radio network show, all on the "Believe It or Not" theme.

Robinson, Luther (Bill, "Bojangles"), U.S. Negro dancer (b. Richmond, Va., May 25, 1878—d. New York city, Nov. 25, 1949), had little formal schooling, but began dancing for pennies at the age of eight, when he had also begun to work as a stableboy. He eventually made a swing of a vaudeville circuit, and in 1908 entered a business association with Marty Forkins, actor's agent, who helped him to fame. He became a star of Negro musical comedies, later a top vaudeville star and finally a star of motion pictures, appearing in *In Old Kentucky*, *The Littlest Rebel* and *The Little Colonel*. His soft-shoe and tap routines were widely copied by other dancers, but Robinson was probably unmatched for ingenuity in creating new steps. He also was famed for a unique ability to run backward—almost as fast as other men could run forward; he once ran 75 yd. backward in eight and one-fifth seconds. Despite his earnings, which reached $6,600 a week for at least one year, he died in relative poverty, chiefly because of his many benefactions, to white persons and Negroes alike. On his death, he received tributes from royalty, the White House and members of the president's cabinet.

Roe, Humphrey Verdon, British pioneer in aviation (b. April 18, 1878—d. London, Eng., July 25, 1949).

Rojas Arreola, Luis Manuel, president of assembly which framed Mexico's constitution (b. Ahualulco de Mercado, Jalisco, Mex.—d. Mexico City, Mex., Feb. 27, 1949).

Rosenthal, David, U.S. painter and etcher (b. Cincinnati, O., Feb. 15, 1876—d. Cincinnati, Oct. 20, 1949).

Ross, Philip Dansken, Canadian newspaper editor (b. Montreal, Que., Jan. 1, 1858—d. Ottawa, Ont., July 5, 1949).

Rothschild, Édouard-Alphonse James de, Baron, French banker (b. Paris, Fr., Feb. 24, 1868—d. Paris, June 30, 1949), was the head of the French branch of the Rothschild family. He was a regent of the Bank of France, president of the Rothschild Brothers bank, and president of the Compagnie du Chemin de fer du Nord. He owned the largest racing stables in France and was one of the most prominent figures of the French turf. In 1926 he played an important part with Raymond Poincaré in stabilizing the franc. During World War II he was deprived of his French nationality by the anti-Semitic laws of the Vichy government and in 1940 went to live in the United States until the liberation of France, when he returned to his country.

Roy, Percy Albert, U.S. educator (b. New Orleans, La., Jan. 8, 1889—d. West Palm Beach, Fla., July 1, 1949).

Runciman of Doxford, Walter Runciman, 1st Viscount, British politician (b. South Shields, Dur., Eng., Nov. 19, 1870—d. Doxford, Northumb., Eng., Nov. 14), was educated at Trinity college, Cambridge. In 1898 he unsuccessfully contested the Gravesend division of Kent as a Liberal and in 1899 was elected for Oldham (defeating Winston Churchill). In the following year he was defeated by Churchill in the general election; Runciman again sat in the house of commons for Dewsbury, 1902–18, for Swansea West, 1924–29, and for St. Ives, Cornwall, 1929–37. After 1931 he sat as a Liberal National. He held many posts in Liberal governments, his first being parliamentary secretary to the local government board, 1905–07. He was financial secretary to the treasury, 1907–08, president of the board of education, 1908–11, and of the board of agriculture, 1911–14. He was president of the board of trade, 1914–16, and again in the national government, 1931–37. In 1937 he was created a viscount and in the following year went to Czechoslovakia as head of a mission which attempted to persuade the Czechs to accept the claims of the Sudeten Germans. The mission failed, but from the beginning it did not appear to have had any hope of success. He returned to the government as lord president of the council, 1938–39.

ushcliffe, Henry Bucknall Betterton, 1st Baron, of Blackfordby in the County of Leicester, British politician (b. Aug. 15, 1872—d. Seaford, Sus., Eng., Nov. 18, 1949), was educated at Rugby and at Christ Church, Oxford, and in 1896 was called to the bar. In 1918 he was elected Conservative member of parliament for Rushcliffe and continued to represent the division, from which he later took his title, until he was created a peer in 1935. He was parliamentary secretary to the ministry of labour, 1923–24 and Nov. 1924–29, and minister of labour from 1931 until 1934, when he became the first chairman of the assistance board, which he himself had set up as minister of labour. He retired from the assistance board in 1941 and later served as chairman of the National Service Hostels corporation, 1941–46; of the Land Title inquiry; of the Nurses' Salaries committee; and in 1945 of the Committee on Legal Aid and Legal Advice.

utledge, Wiley Blount, U.S. supreme court justice (b. Cloverport, Ky., July 20, 1894—d. York, Me., Sept. 10, 1949), studied at Maryville college, Maryville, Tenn., and the University of Wisconsin, Madison, and began teaching school in Bloomington, Ind., while studying law at Indiana University. In 1917 he went to New Mexico for his health, and in 1922 obtained his law degree from the University of Colorado, Boulder. He taught law at the University of Colorado, Washington university in St. Louis, Mo., and at Iowa State university, Iowa City, and was dean of the law schools at the latter two institutions. In 1939 Pres. F. D. Roosevelt named him an associate justice of the U.S. court of appeals for the District of Columbia. In 1943 President Roosevelt appointed him to the U.S. supreme court, where he became identified with the liberal bloc of the court, winning national attention especially for resounding dissents from certain majority opinions of the court, in which he was frequently joined by Justice Frank Murphy.

yder, Chauncey Foster, U.S. water-colour artist and etcher (b. Danbury, Conn., Feb. 29, 1868—d. Wilton, N.H., May 18, 1949).

achs, Josef Ernst, Swedish industrialist (b. Stockholm, Swed., Jan 4, 1872—d. Stockholm, June 23, 1949).

apru, Sir Tej Bahadur, Indian lawyer and government official (b. Dec. 8, 1875—d. Allahabad, United Provinces, Jan. 20, 1949). (For his early life see *Encyclopædia Britannica.*) He attended the Round Table conferences in London in 1930, 1931 and 1932. In 1933 he returned to London to confer with the parliamentary committee on Indian reforms and in the following year was made a privy councillor. During World War II Sapru favoured co-operation with Britain, provided that the composition of the viceroy's executive council was changed.

chindler, John Franklin, U.S. criminologist (b. near Philadelphia road, O., 1857?—d. Santa Barbara, Calif., Sept. 21, 1949).

chlesinger, Leon, U.S. motion-picture producer (b. Philadelphia, Pa., 1884—d. Los Angeles, Calif., Dec. 25, 1949).

chmitz, Elie Robert, French-born pianist (b. Paris, Fr., Feb. 8, 1889—d. San Francisco, Calif., Sept. 5, 1949).

clater, John Robert Paterson, Canadian clergyman (b. Manchester, Eng., April 9, 1876—d. Grantown-on-Spey, Moray, Scot., Aug. 24, 1949).

cott, John Russell, British newspaper publisher (b. July 12, 1879—d. Manchester, Eng., April 5, 1949).

eashore, Carl Emil, Swedish-born psychologist (b. Mörlunda, Swed., Jan. 28, 1866—d. Lewiston, Ida., Oct. 16, 1949).

ellers, David Foote, U.S. admiral (b. Austin, Tex., Feb. 4, 1874—d. Bethesda, Md., Jan. 27, 1949), was graduated from the U.S. Naval academy in 1894 and served in the Spanish-American War, the Samoan campaign and the Philippine insurrection. During World War I he served as commander of troop transports and later as commander of district forces afloat in the Norfolk area. After the war he served as a staff member of the Naval War college, returned for a time to the bureau of navigation in the navy department and in 1921–22 was aide to the secretary of the navy. He received a citation for his service as senior officer present during the U.S. intervention in Nicaragua, 1927–29. He was judge advocate general of the navy in 1929–30 and commander in chief of the U.S. fleet from June 10, 1933, to June 15, 1934, when he became superintendent of the Naval academy. He was on the retirement list after 1938.

naw, Charles Gray, U.S. philosopher and writer (b. Elizabeth, N.J., June 23, 1871—d. Spring Lake, N.J., July 28, 1949).

nean, Al (Al Schonberg), U.S. vaudeville and stage star (b. Dornum, Ger., May 1868—d. New York, N.Y., Aug. 12, 1949), son of a magician and ventriloquist and an uncle of the four Marx brothers, was reared in New York, where he entered on a vaudeville career at the age of 16. He joined forces with Ed Gallagher in vaudeville, and their variety act became one of the most successful of their day. Perhaps the height of their success came during their appearance in the Ziegfeld Follies of 1923–24. Their song, "Absolutely, Mr. Gallagher?—Positively, Mr. Shean!" was sung in the form of numerous parodies. Shean continued to appear in later years, both on the stage and in motion pictures, winning special praise for his portrayal of the monk in *Father Malachy's Miracle* in 1937.

He also appeared in the motion pictures *San Francisco, The Great Waltz, Broadway Serenade, Friendly Neighbors* and *Ziegfeld Girl.*

Shiels, George, Northern Ireland playwright (b. Co. Antrim, Ire., June 24, 1886—d. Ballymoney, Co. Antrim, N.Ire., Sept. 19, 1949).

Shiratori, Toshio, Japanese diplomat and government official (b. 1877—d. Tokyo, Jap., June 4, 1949).

Short, Walter Campbell, U.S. army officer (b. Fillmore, Ill., March 30, 1880—d. Dallas, Tex., Sept. 3, 1949).

Shumaker, Edward E., U.S. industrialist (b. near Somerset, Pa., 1882?—d. Merchantville, N.J., Nov. 3, 1949), financed his education by working in a coal mine, sawmill and stone quarry, and joined the Victor Talking Machine company in Camden, N.J., in 1904. He was named to its board of directors in 1920. In 1926 he was named vice-president as a result of his negotiations with the Western Electric company which gave Victor the use of certain Bell laboratories' inventions, resulting in the development of the Orthophonic Victrola. In 1927 Shumaker became president of the Victor company, and in 1930, when the company merged with the Radio Corporation of America, he was elected president of the new corporation RCA-Victor, serving until his resignation in Jan. 1932. He also was a former vice-president and director of Western Electric company; president and director of Erpi Classroom Films, Inc.; and president of Encyclopædia Britannica Films Inc.

Sims, Philip Hal, U.S. bridge expert and sportsman (b. Selma, Ala., Nov. 8, 1886—d. Havana, Cuba, Feb. 26, 1949), worked as a bank teller in Chicago, Ill., and New York, N.Y., and during World War I served in combat as a pilot with the royal naval air service. He became a tournament bridge player and was recognized as world champion in the early 1930s. An ardent follower of other sports and games, including tennis, billiards and racing, he began, at the age of 48, to engage in tournament golf.

Singh, Sir Jagatjit, maharaja of Kapurthala (b. Sept. 1872—d. Bombay, India, June 19, 1949).

Sloan, Laurence Henry, U.S. editor and economist (b. Spencer, Ind., April 29, 1889—d. New Haven, Conn., May 6, 1949).

Slocum, George Mertz, U.S. publisher (b. Caro, Mich., Jan. 24, 1889—d. Detroit, Mich., Oct. 29, 1949).

Smith, Anne (Mrs. R. H. Smith), U.S. co-organizer of Alcoholics Anonymous (b. Moline, Ill., 1881—d. Akron, O., June 1, 1949).

Smith, David Stanley, U.S. musician, conductor and composer (b. Toledo, O., July 6, 1877—d. New Haven, Conn., Dec. 17, 1949).

Smith, Elias Anthon Cappelen, Norwegian-born engineer and industrialist (b. Trondheim, Nor., Nov. 6, 1873—d. New York city, June 25, 1949).

Smith, Sydney Ure, Australian etcher and painter (b. Stoke Newington, London, Eng., Jan. 1887—d. Sydney, Austr., Oct. 11, 1949).

Smythe, Francis Sydney, British mountaineer (b. Maidstone, Kent, Eng., July 6, 1900—d. Colgate, Sus., Eng., June 27, 1949), was educated at Berkhamsted school and in 1919 entered Faraday House Engineering college. He joined the royal air force in 1926 but was invalided out of the service the following year. After gaining experience in the Alps he made his first visit to the Himalaya in 1930 as a member of the International Kanchenjanga expedition led by Dr. G. O. Dyhrenfurth, and in 1931 he led a small party of British climbers which succeeded in reaching the top of Kamet (25,477 ft.). Smythe made three attempts on Everest (29,002 ft.) in 1933, 1936 and 1938, and in the first of these he was one of three men who reached 28,000 ft.—the highest point from which any climber had returned safely. During World War II he helped to train troops in mountain warfare. New fields were explored when in 1946 and 1947 he took part in expeditions in the Canadian Rockies. His 1947 expedition in the Lloyd George range was undertaken by the use of aircraft to reach the heart of the range. He died from an illness contracted during his last visit to the Himalaya.

Snagge, Sir Harold, British banker, industrialist (b. Dec. 28, 1872—d. London, Eng., March 19, 1949).

Snow, Francis, U.S. editor and author (b. Boston, Mass., 1877—d. New York, N.Y., Feb. 6, 1949).

Solem, Erik, Norwegian jurist (b. Oslo, Nor., Aug. 23, 1877—d. Oslo, Nor., July 15, 1949).

Somerville, Edith Anna Oenone, Irish artist and authoress (b. Corfu, Gr., 1861—d. Castletownshend, County Cork, Ire., Oct. 8, 1949).

Somerville, Sir James Fownes, British admiral (b. Somerset, England, July 17, 1882—d. Wells, Som., March 19, 1949), won the distinguished service order at the Dardanelles during World War I. By 1937 he was vice-admiral, and during World War II a special task force, Force H, was formed, comprising the battleship "Renown," the carrier "Ark Royal," the cruiser "Sheffield" and supporting vessels, with Admiral Somerville in command. This force led the action against the French fleet at Oran, and was chiefly responsible for keeping the Mediterranean safe for British convoys after Italy entered the war. Planes from the force bombed Genoa in Feb. 1941, and its aircraft sighted the German battleship "Bismarck" and dogged it until it was sunk. In 1942 Sir James was commander in chief of the British fleet in the far east. From Oct. 1944 to the end of 1945, he headed the British admiralty delegation in Washington, serving on the combined chiefs of staff, the Allied strategic high command. He retired in 1946.

Sommer, William, U.S. painter (b. Detroit, Mich., 1867—d. Cleveland, O., June 20, 1949).

Sophoulis, Themistocles, Greek prime minister (b. Vathy, island of Samos, Nov. 25, 1861—d. Kifissia, Gr., June 24, 1949), an archaeologist and man of letters by profession, was the leader of the movement which sought for Samos freedom from Turkish rule. This was accomplished in 1912, and Sophoulis became head of the island's new government, which that same year proclaimed union with Greece. He was appointed governor-general of Macedonia in 1914, and was elected to represent Samos in the Greek parliament in 1915. A staunch supporter of the Liberal leader, Eleutheries Venizelos, Sophoulis assisted him in setting up the revolutionary pro-Allied government at Salonika in 1916, returning to Athens the next year, after King

Constantine had been deposed. Sophoulis was president of the chamber of deputies from 1917 to 1920, and was thereafter in and out of government office. In 1924, after the proclamation of the republic, he was for a time prime minister. Venizelos died in 1936, and Sophoulis succeeded as Liberal party chief, but during the dictatorship of Gen. John Metaxas, 1936–41, he held no public office. In 1944 he was arrested by the Germans and was detained in the Haidari concentration camp near Athens. After the liberation he took office as prime minister of a Republican cabinet on Nov. 22, 1945, but resigned after the elections of March 31, 1946, had given victory to the Populist (conservative) party. On Sept. 7, 1947, he again assumed the premiership in a coalition government composed of Liberals and Populists. He reshuffled his cabinet in May and November 1948 and in January and April 1949.

Sotomayor y Luna, Manuel, vice-president of Ecuador (b. Quito, Ec., Nov. 4, 1887—d. Guayaquil, Ec., Oct. 16, 1949).

Spoor, Simon Hendrik, Netherlands general (b. Amsterdam, Neth., Jan. 12, 1902—d. Batavia, Java, May 25, 1949), graduated from the Breda Military academy as second lieutenant in 1923. Posted to Indonesia, he returned to Holland in 1929 to study at the staff college. He was attached to the general staff in Indonesia in 1932, and returning to Holland two years later was promoted captain and appointed lecturer at the Breda academy. In 1938 he was back at Batavia and at the beginning of 1942, with the rank of major, was attached to General Douglas MacArthur's staff. After the capitulation of Japan he returned to Indonesia as a colonel and director of the Netherlands forces intelligence service. In Jan. 1946 he was promoted major-general and appointed commander-in-chief of the Netherlands forces in Indonesia and head of the war department there, becoming lieutenant-general in September. He led the military operations against the Republic of Indonesia which started on Dec. 18, 1948. He was promoted general on May 23, 1949, and died from a heart attack two days later.

Squire, Amos Osborne, U.S. physician (b. Cold Spring, N.Y., May 28, 1876—d. Ossining, N.Y., Feb. 11, 1949), was graduated from the Columbia College of Physicians and Surgeons, New York city, in 1899 and began the practice of medicine in Westchester county, N.Y. From 1906 to 1912 he served as that county's coroner and from 1910 to 1920 ran a private sanitarium in Ossining, meantime being appointed chief physician of the Sing Sing prison, 1910–25. He campaigned ceaselessly against capital punishment and was renowned for his many reforms undertaken for the advantage of prisoners at Sing Sing.

Staples, Owen, Canadian etcher and cartoonist (b. Stoke, Sub Hamdon, Som., Eng., Sept. 3, 1866—d. Toronto, Ont., Dec. 6, 1949).

Stearns, Alfred Ernest, U.S. educator (b. Orange, N.J., June 6, 1871—d. Andover, Mass., Nov. 15, 1949).

Sterling, Ross Shaw, U.S. oil magnate, former governor of Texas (b. Anahuak, Tex., Feb. 11, 1875—d. Fort Worth, Tex., March 25, 1949).

Stettinius, Edward R., Jr., U.S. industrialist and former secretary of state (b. Chicago, Ill., Oct. 22, 1900—d. Greenwich, Conn., Oct. 31, 1949), attended the Pomfret (Conn.) school and entered the University of Virginia (Charlottesville) but left without taking a degree. He began work as a stockroom clerk in the Hyatt Roller Bearing works in 1924. His father was a director of General Motors corporation, and in 1926 Stettinius became assistant to a General Motors vice-president. In 1931 he became vice-president in charge of industrial and public relations. He transferred to the United States Steel corporation, becoming vice-chairman of its finance committee in 1934 and chairman of the board of the corporation, at the age of 37, in 1938. In 1939 he became chairman of the War Resources board, and in Jan. 1941 director of priorities in the Office of Production Management. His promotion of a vital wartime synthetic rubber program prompted Pres. Franklin D. Roosevelt to select him as lend-lease administrator. In 1943 he was named under-secretary of state, and in 1944 was appointed secretary of state to succeed Cordell Hull. He held this post until June 1945, when he resigned to become first U.S. delegate to the general assembly of the United Nations, a post he held until 1946, when he resigned. He was one of President Roosevelt's advisers at the Yalta conference in 1945; was active in the Dumbarton Oaks conference preliminary to the formation of the United Nations; and was generally credited with being a leading U.S. mover in the formation of the United Nations itself.

Stevens, Albert William, U.S. army officer (b. Belfast, Me., March 13, 1886—d. Redwood City, Calif., March 26, 1949), completed his studies at the University of Maine, Orono, Me., and enlisted in World War I as a private, winning his commission and serving later as an aerial photographer. In 1930 in South America he took the first photograph showing the lateral curvature of the earth's surface. In 1932 he took the first photograph of the moon's shadow on the earth during an eclipse of the sun. In 1932 he also took a picture showing Mount Shasta's peak 331 mi. from the camera. With Orvil Anderson on Nov. 11, 1935, he ascended to 13.7 mi. in a balloon launched from near Rapid City, S.D., in a flight jointly sponsored by the National Geographic society and the army air corps. The flight not only set an altitude record but gave important information about the stratosphere.

Stevens, Neil Everett, U.S. botanist (b. Portland, Me., April 6, 1887—d. Champaign, Ill., June 26, 1949).

Stewart, Duncan George, British colonial governor (b. Wilkleifontein, Transvaal, U. of S. Af., Oct. 22, 1904—d. Singapore, Dec. 10, 1949), was educated at Winchester and Oriel college, Oxford. In 1928 he joined the colonial service and served in Nigeria. In 1944 he was transferred to the Bahamas as colonial secretary and in 1947 went to Palestine as financial secretary. He was in charge of the Palestine accounts clearance office in Cyprus when, in Sept. 1949, he was appointed governor of Sarawak in succession to Sir Charles Arden Clarke. He arrived in the colony in November. On Dec. 3, during his first visit to Sibu, the second largest town in Sarawak, he was stabbed by a 16-year-old Malay and seriously wounded. He was flown to Singapore and died a week later.

Stewart, Sir James Purves-, British neurologist (b. Edinburgh, Scot., Nov. 20, 1869—d. London, Eng., June 14, 1949).

Stewart, William Downie, New Zealand government official, publicist (b. Dunedin, N.Z., July 29, 1878—d. Dunedin, Sept. 29, 1949).

Stockdale, Sir Frank Arthur, British colonial administrator (b. June 24, 1883—d. London, Eng., Aug. 3, 1949).

Stothart, Herbert, U.S. composer and arranger (b. Milwaukee, Wis., Sept. 11, 1885—d. Los Angeles, Calif., Feb. 1, 1949), studied at the University of Wisconsin. He entered show business as producing musical director of a series of Broadway shows under Oscar Hammerstein 2nd, and eventually collaborated with Franz Lehar, Vincent Youmans, George Gershwin and Rudolf Friml. He went to Hollywood originally to score the production *The Rogue Song*, and later worked as musical director for pictures that co-starred Nelson Eddy and Jeanette MacDonald. He won an Academy award for his musical score for *The Wizard of Oz.*

Strathmore and Kinghorne, Patrick Bowes-Lyon, 15TH EARL OF, British peer, eldest brother of Queen Elizabeth (b. Sept. 22, 1884—d. Glamis castle, Scot., May 25, 1949).

Strauss, Richard, German composer and conductor (b. Munich, Ger., June 11, 1864—d. Garmisch-Partenkirchen, Ger., Sept. 8, 1949), was the son of Franz Strauss, a horn player in the opera orchestra. He began to compose at the age of six, studied music at Munich and at 21 became conductor of the Meiningen court orchestra. In 1889 he was the conductor at Weimar, five years later at Munich, and in 1898 he became conductor at the Berlin state opera. In 1905 was produced his first great opera, *Salome*, based on Oscar Wilde's libretto. In 1909 with the production of *Elektra* began his long partnership with the Austrian poet Hugo von Hoffmannsthal. From this collaboration many operas were born including the most successful, *Der Rosenkavalier* (1911), *Ariadne auf Naxos* (1912) and *Die Frau ohne Schatten* (1919). *Arabella*, composed in 1929 and produced four years later, failed to achieve success. Among symphonic poems, *Till Eulenspiegels lustige Streiche* (1895), *Don Quixote* (1898) and *Don Juan* (1889) are generally the most esteemed. To the nazis Strauss's world-wide reputation made him an acceptable president of their *Reichsmusikkammer*, but his appointment in 1933 brought him no credit and he did not remain in favour. In 1935 he produced at Dresden *Die schweigsame Frau*, an opera of which the libretto, based on Ben Jonson's comedy, *Epicoene or The Silent Woman*, was adapted by Stefan Zweig. Because the latter was a Jew the opera was banned after its second performance and Strauss resigned the presidency of the *Reichsmusikkammer*. The opera *Friedenstag*, produced at Munich in 1938, was hissed by the nazis. In 1944 and early 1945 Strauss took refuge in Switzerland. (*See* also *Encyclopædia Britannica.*)

Strean, Maria Judson, U.S. miniature and water-colour artist (b. Washington, Pa.—d. Pittsburgh, Pa., July 14, 1949).

Suhard, Emmanuel Celestine, CARDINAL, French archbishop of Paris (b. Brains-sur-les-Marches, Mayenne Dist., Fr., April 6, 1874—d. Paris, Fr., May 29, 1949).

Sullivan, Timothy, former chief justice of Eire (b. 1874—d. Dublin, Ire., March 29, 1949).

Tack, Augustus Vincent, U.S. mural and portrait painter (b. Pittsburgh, Pa., Nov. 9, 1870—d. Deerfield, Mass., July 20, 1949).

Tandy, Vertner W., Sr., U.S. architect (b. Lexington, Ky., May 17, 1885—d. New York city, Nov. 7, 1949).

Taussig, James Edward, U.S. retired railroad executive (b. St. Louis, Mo., May 4, 1865—d. St. Louis, Oct. 3, 1949).

Tchernowitz, Chaim, U.S. authority on Talmudic law (b. Sebej, Lith., 1871—d. New York, N.Y., May 15, 1949), was ordained a rabbi in 1896 and became rabbi of Odessa, where he founded a rabbinical college. He remained there until 1912. He studied at various European universities, receiving his Ph.D. degree from the University of Würzburg, Germany, in 1914. In 1923 he moved to the U.S. to become professor of Talmud at the Jewish Institute of Religion in New York city, where he was named professor emeritus in 1947. His various learned studies, produced from 1897 up to the time of his death, concerned research into Talmudic history and law, as well as essays on Zionism. He was president of the Jewish Academy of Arts and Sciences, and founder and editor of the American Hebrew monthly, *Bitzaron*. The Palestinian colony of Givath Chaim was named in his honour.

Thoeny, William, Austrian-born painter (b. Austria, 1888—d. New York city, May 1, 1949).

Thomas, James Henry, British government official and trade union leader (b. Newport, Monm., Eng., Oct. 3, 1874—d. London, Eng., Jan. 21, 1949), left school when nine years of age and started work as an errand boy. He was an active trade union organizer at Swindon and later worked for the Amalgamated Society of Railway Servants in Manchester and in south Wales, becoming its assistant secretary. He was general secretary of the National Union of Railwaymen in 1918–24 and 1925–31. From 1910, when he was elected M.P. for Derby, he took an active part in politics and when Labour took office in 1924 he became colonial secretary. In 1926 Thomas opposed the general strike but he also disapproved of the government's handling of the situation and particularly of the Trade Disputes and Trade Unions bill which was introduced in the following year. In 1929 he became lord privy seal and minister of employment in the second Labour government. When the Imperial conference met in 1930 Thomas, as secretary of state for the dominions, took an important part. In 1931 he entered the new National government continuing to hold the same office and, for a time, the secretaryship of the colonies as well. He had been repudiated by the Derby Labour party but was returned in the election of that year when he stood as an independent Labour candidate. Returned again in 1935 he became colonial secretary. In 1936 he was found by a tribunal of inquiry to be guilty of the disclosure of information about the budget. He had not profited personally by his foreknowledge but resigned nevertheless and retired from politics. In 1937 his book, *My Story*, was published. (*See* also *Encyclopædia Britannica.*)

Thompson, Fred, British musical-comedy writer (b. London, Eng., Jan. 24, 1884—d. London, April 10, 1949).

Thorndike, Edward Lee, U.S. educator and experimental psychologist (b. Williamsburg, Mass., Aug. 31, 1874—d. Montrose, N.Y., Aug. 9, 1949), was educated at Wesleyan university, Middletown, Conn., and at Harvard and Columbia universities. He taught at Western Reserve university in Cleveland, O., and in 1899 went to Columbia, where he became professor of educational psychology. He prepared basic teaching material for what was then the new subject of educational psychology, and helped devise the intelligence tests used by the U.S. army in World War I. He was one of the first experimenters in animal psychology, and developed such standard testing devices as the maze and the puzzle box. He was the author of almost 500 articles and books, among them *Human Nature and the Social Order, The Thorndike-Century Senior Dictionary,* and *The Teacher's Word Book of 30,000 Words.*

Tilden, Mrs. Linda Palmer Teece Littlejohn, Australian feminist leader (b. Sydney, Austr., 1889?—d. Sydney, March 21, 1949), became president of the United Associations of Women in Australia and of the Equal Rights International, with headquarters in Geneva, Switzerland. She was also former president of the New South Wales board of health and a director of the woman's Australian national service. She served as a radio commentator, and contributed articles to many publications besides writing a novel, *Life and Lucille.* Her second marriage was in 1942 to Charles J. Tilden, professor emeritus of engineering mechanics at Yale university.

Timken, William Robert, U.S. retired roller-bearing manufacturer (b. St. Louis, Mo., Feb. 24, 1866—d. Croton-on-Hudson, N.Y., June 11, 1949).

Tittle, Ernest Fremont, U.S. clergyman (b. Springfield, O., Oct. 21, 1885—d. Evanston, Ill., Aug. 3, 1949), attended Ohio Wesleyan university, Delaware, O., and Drew Theological seminary, Madison, N.J., and was ordained in the Methodist ministry in 1910. He occupied pastorates in various cities in Ohio and in 1918 went to the First Methodist church of Evanston, where he served for more than 30 years. An outspoken pacifist and liberal, Tittle was internationally known in church circles. He was a delegate to the World Conference on Church, Community and State, Oxford; chairman of the Commission on World Peace of the Methodist Church; a member of the Federal Council of Churches Commission to Study the Bases of a Just and Durable Peace; and a leader in the National Conference of Christians and Jews. In 1932 he held the lectureship on preaching under the Lyman Beecher foundation at Yale university, New Haven, Conn., and he had also held lectureships at the Colgate-Rochester Divinity school, Rochester, N.Y.; the Pacific School of Religion, Berkeley, Calif.; Grinnell college, Grinnell, Ia.; DePauw university, Greencastle, Ind.; Auburn Theological seminary, Auburn, N.Y.; and Ohio Wesleyan. He was the author of many books and articles on religious subjects.

Tolbukhin, Feodor Ivanovich, soviet marshal (b. Andronniki, Yaroslavl province, Russia, June 16, 1894—d. Oct. 17, 1949), was the son of a peasant. During World War I he rose from private to captain; he joined the Red army and in 1920 commanded a division. After the civil war he graduated from the Frunze Military academy, Moscow, and in 1941 was a major general and chief of staff of a military district. During World War II he distinguished himself as a tactician and an expert in tank warfare. In Nov. 1942 he commanded the army which, from the southeast, helped to encircle the German Sixth army at Stalingrad; and on Feb. 1, 1943, he personally accepted Field Marshal Friedrich von Paulus' surrender. In Aug. 1943 he defeated the Germans at Taganrog; later he took Melitopol, contributed to the liberation of the Crimea and on May 9, 1944, recaptured Sevastopol. In Aug. 1944, his armies swept through Rumania into Bulgaria, and it was he who signed the Bulgarian armistice in Moscow on Oct. 28, 1944. Promoted marshal on Sept. 12, 1944, he contributed to the liberation of Yugoslavia; in Dec. 1944 his army group reached Balaton lake in Hungary, and early in 1945 he participated in the battles of Budapest and Vienna. His last appointment was as commander of the troops of the Transcaucasian military district. His ashes were buried in the Red square in Moscow on Oct. 19.

Towne, Charles Hanson, U.S. author and editor (b. Louisville, Ky., Feb. 2, 1877—d. New York, N.Y., Feb. 28, 1949), attended public schools in New York, and spent a year at City College of New York. He served as editorial assistant on *Cosmopolitan* magazine, then became editor of *Smart Set,* later managing editor of *McClure's Magazine* (1915–20) and editor of *Harper's Bazaar* (1926–31). He was the author of 27 books, one of the last of which was his autobiography, *So Far So Good,* published in 1945. He collaborated with Deems Taylor in writing *The City of Joy* and with Amy Woodforde-Finden in writing four song cycles including "The Magic Casement."

Tredegar, Evan Frederic Morgan, 2nd Viscount, Welsh artist (b. July 13, 1893—d. near Horsham, Sus., Eng., April 27, 1949).

Trier, Charles, U.S. actor and director (b. New York city, 1864?—d. New York city, Aug. 15, 1949).

Turina Joaquín, Spanish pianist and composer (b. Seville, Sp., Dec. 9, 1882—d. Madrid, Sp., Jan. 14, 1949). (See *Encyclopædia Britannica.*)

Ullswater, James William Lowther, 1st Viscount, of Campsea Ashe, Suffolk, British parliamentarian (b. April 1, 1855—d. Campsea Ashe, Suff., Eng., March 27, 1949).

Undset, Sigrid, Norwegian author (b. Kalundborg, Den., May 20, 1882—d. Lillehammer, Nor., June 10, 1949), earned an international reputation by her three novels, *Fru Marta Oulie* (1907), *Jenny* (1911) and *Kristin Lavransdatter* (1920–22), for the last of which, a three-volume work based on mediaeval life in Norway, she was awarded the Nobel prize for literature in 1928. Historical studies made for *Kristin Lavransdatter* led to her conversion to Roman Catholicism in 1925. *Olav Audunsson* (1925–27), *Ida Elizabeth* (1932) and *Saga of Saints* (1934) continued the historical series, and in 1939 her autobiography, *Men, Women and Places,* appeared. A year later, when Norway was invaded, Fru Undset issued a strong statement urging her countrymen to resist. Eventually she fled with her younger son, Hans, through Stockholm, Moscow and Vladivostok to the United States; at Stockholm she learned that her elder son, Anders, had been killed fighting the Germans. Returning to Norway in July 1945, she lived quietly at Lillehammer. Her last book, *Happy Times in Norway,* appeared in 1942 in New York city. In 1912 she married the painter A. C. Svarstad, but the marriage was dissolved in 1925. (*See* also *Encyclopædia Britannica*).

U'Ren, William S., U.S. originator of the "Oregon system" (b. Wisconsin, 1859?—d. Portland, Ore., March 8, 1949), was reared as a farmer and worked as a blacksmith before beginning the study of law. Settling in Oregon to practise law, he became influenced by the Henry George single-tax theory, and promoted the idea of the initiative as the way to bring it about. This interest he expanded to what eventually came to be called the "Oregon system," for which he was largely responsible. This included the initiative, the referendum, the recall and the direct election of U.S. senators. The reforms he advocated and helped to execute as a member of the Oregon legislature were widely copied in other states and eventually, in part, by the congress of the United States.

Uthwatt, Augustus Andrewes Uthwatt, Baron (life peer), of Lathbury, Buckinghamshire, British lord of appeal (b. Australia, April 25, 1879—d. Sandwich, Kent, Eng., April 24, 1949).

Vanbrugh, Dame Irene, British actress (b. Exeter, Devon, Eng., Dec. 2, 1872—d. London, Eng., Nov. 30, 1949), made her first stage appearance at the age of 16 as Phoebe in *As You Like It* at the Theatre Royal in Margate. After this she toured with J. L. Toole's company and played in England, Australia and New Zealand. She first appeared on the London West End stage in 1892 and in following years was with Beerbohm Tree, George Alexander and A. Bourchier. Her work showed great versatility but it was in light comedy in which she excelled. She created among other parts those of the Hon. Gwendolen Fairfax in *The Importance of Being Earnest,* Lady Mary Lazenby in *The Admirable Crichton,* Rose Trelawny in *Trelawny of the Wells.* She made many tours of Australia, New Zealand and South Africa and during World War II worked with the Entertainments National Service association (E.N.S.A.). She appeared in films including *Catherine the Great* and *I Live in Grosvenor Square.* Her autobiography, *To Tell My Story,* was published in 1948. In 1901 she married Dion Boucicault, an actor and stage director; he died in 1929. She was created a dame commander of the Order of the British Empire on Jan. 1, 1941.

Vaugoin, Karl, former chancellor of Austria (b. Vienna, Aus., July 8, 1873—d. Krems, Aus., June 11, 1949).

Verne, Henri, French former director of the Louvre (b. 1879?—d. Paris, Fr., Feb. 16, 1949).

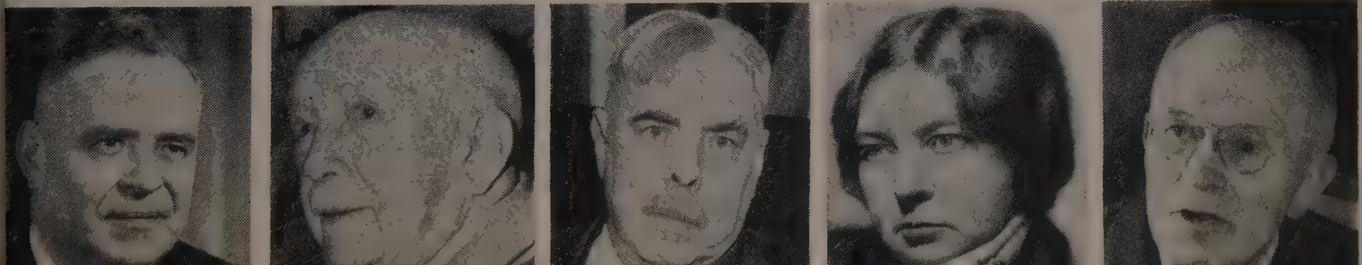
Villard, Oswald Garrison, U.S. publisher, editor and author (b. Wiesbaden, Ger., March 13, 1872—d. New York, N.Y., Oct. 1, 1949). His father, Henry Villard, was president of the Northern Pacific railroad and his mother, Fanny Garrison Villard, was the daughter of William Lloyd Garrison, great Civil War liberal. As a youth of 11 Oswald drove the final spike to complete the Northern Pacific railroad. He studied at Harvard university, was a reporter for the *Philadelphia Press,* 1896–97, and in the latter year inherited the *New York Evening Post* from his father. He made the *Post* one of the most influential papers of its day. He opposed U.S. entry into World War I, and because this stand was unpopular and was hurting the circulation of the *Post,* he sold the paper but retained control of the *Nation,* which began as a weekly supplement to the *Post.* He continued to edit the *Nation* until 1932. Besides his influential writings in periodicals, he was the author of a number of books, including an autobiography, published in 1939, and *The Disappearing Daily,* a study of his favorite theme, the daily newspaper, published in 1944.

Viskniskki, Guy T., U.S. editor of *Stars and Stripes,* World War I (b. Carmi, Ill., 1876?—d. Montclair, N.J., Sept. 5, 1949).

Wadsworth, Edward Alexander, British painter (b. Cleckheaton, Yorks., Eng., Oct. 1889—d. London, Eng., June 21, 1949).

Wagner, Elin, Swedish novelist (b. Lund, Swed., 1882—d. Bergslund, Swed., Jan. 7, 1949).

Wakatsuki, Reijiro, Baron, Japanese former premier (b. Matsuye, Jap., Feb.



1949 OBITUARIES: Wiley B. Rutledge, U.S. jurist; Richard Strauss, German composer; Edward L. Thorndike, U.S. psychologist; Sigrid Undset, Norwegian author; Oswald Garrison Villard, U.S. editor

5, 1866—d. near Ito, Jap., Nov. 21, 1949).

Walker, Hugh Kelso, U.S. clergyman (b. Rogersville, Tenn., Dec. 5, 1861—d. Hollywood, Calif., Sept. 19, 1949).

Walker, Joseph Henry, British newspaper editor (b. Warrington, Lancs., Eng., 1890?—d. Bath, Som., Eng., June 18, 1949).

Walling, Robert Alfred John, British editor, writer (b. Exeter, Dev., Eng., Jan. 1869—d. Plymouth, S. Dev., Eng., Sept. 4, 1949).

Walls, Tom Kirby, British actor and race horse owner (b. Kingsthorpe, Northants., Eng., Feb. 18, 1883—d. Ewell, Sur., Eng., Nov. 27, 1949).

Walsh, William Thomas, U.S. biographer, novelist and poet (b. Waterbury, Conn., Sept. 11, 1891—d. White Plains, N.Y., Feb. 22, 1949), attended Yale university, then spent four years as a newspaper reporter on papers in Connecticut and Philadelphia. From 1918 until 1933 he was head of the English department of the former Roxbury school, now the Cheshire academy, Cheshire, Conn., and in 1933 he joined the faculty at Manhattanville College of the Sacred Heart in New York, where he served as professor of English until he retired in 1947. Among his works that received most attention were the biographies *Isabella of Spain: The Last Crusader* (1931), *Philip II* (1937) and *St. Theresa of Avila* (1943). He was awarded the Laetare medal by the University of Notre Dame in 1941 and in 1944 the Catholic Literary award of the Gallery of Living Catholic Authors. His latest work included the books *Our Lady of Fátima* (1947) and *Saint Peter, the Apostle* (1948).

Walthour, Robert ("Bobby"), U.S. bicycle racer (b. Walthourville, Ga., Jan. 1, 1878—d. Boston, Mass., Sept. 1, 1949), held virtually every cycling record during his racing career, twice winning world championships at the Crystal Palace in London while holding the U.S. championship. He was one of the leading cyclists during the early days of the 20th century, when motor-paced events first came into vogue. At one time in Boston in 1903 he did a mile in 67 sec. in a 15-mi. race; in Germany he rode 57 mi. in the first hour of a 100-km. race; on another occasion in 1904 he smashed 26 records during a 30-mi. race. In 1902 he won virtually every competitive event in motor-paced racing. At a European appearance in 1904 he won 16 out of 17 starts in motor-paced events. In both 1904 and 1905 he won the world motor-paced title, the first year in London and the second in Antwerp, Belgium. During his cycling career he had many accidents, suffered numerous broken bones, and finally retired in 1929 after a fall fractured his collarbone, for what was said to be the 29th time.

Walton, J. C. (Jack), U.S. former governor of Oklahoma (b. Indiana, 1881?—d. Oklahoma City, Okla., Nov. 25, 1949).

Ward, John Chamberlain, U.S. Episcopal bishop (b. Elmira, N.Y., Aug. 27, 1873—d. Buffalo, N.Y., Feb. 15, 1949).

Wardle, Arthur, British painter (b. London, Eng., 1864—d. London, July 16, 1949).

Ware, Sir Fabian, British founder of Imperial War Graves commission (b. Clifton, Bristol, Eng., 1869—d. Amberley, Glos., Eng., April 28, 1949).

Warnow, Mark, U.S. orchestra leader (b. Monastrischt, Russia, April 10, 1902—d. New York, N.Y., Oct. 17, 1949), was taken to the U.S. at the age of 5, studied violin, and began his musical career leading Salvation Army bands and amateur groups. In 1932 he got his first major opportunity as a conductor by substituting as director at a Morton Downey program. His orchestra later became famous as the feature of the National Broadcasting Co. program, "Your Hit Parade," which he conducted in 493 weekly performances.

Warren, Forrest, U.S. newspaper columnist (b. 1878?—d. San Diego, Calif., July 4, 1949).

Weeks, John Elmer, U.S. ophthalmologist (b. Painsville, O., Aug. 9, 1853—d. La Jolla, Calif., Feb. 2, 1949).

Weigl, Karl, Austrian-born composer and conductor (b. Vienna, Aus., Feb. 6, 1881—d. New York city, Aug. 11, 1949).

Welch, Charles Whitefield, U.S. clergyman (b. White county, Tenn., March 11, 1878—d. Louisville, Ky., Nov. 13, 1949).

Wensley, Frederick, British official of Scotland Yard (b. Taunton, Eng., 1865—d. London, Eng., Dec. 4, 1949).

Wentz, Louis Haines (Lew), U.S. oil executive (b. Tama, Ia., 1880?—d. Ponca City, Okla., June 9, 1949).

Westcott, Foss, English-born churchman, metropolitan of India, Burma and Ceylon (b. Harrow, Mdx., Eng., Oct. 23, 1863—d. Darjeeling, India, Oct. 19, 1949).

Whitman, Frank Burton, U.S. sports editor (b. Worcester, Mass., 1886?—d. St. Louis, Mo., May 8, 1949).

Whitney, Alexander Fell, U.S. labour leader (b. Cedar Falls, Ia., April 12, 1873—d. Cleveland, O., July 16, 1949), joined the Brotherhood of Railroad Trainmen in 1896, by 1905 was a member of the board of grand trustees, by 1907 vice-president, and in 1928 was elected president of the organization, holding that position until his death. He was an acknowledged spokesman for much of railroad labour, and was frequently consulted in the drafting of legislation affecting rail workers. He drew a great deal of public notice in 1946 when, with Alvanley Johnston, president of the Brotherhood of Locomotive Engineers, he precipitated a two-day national railroad strike, which prompted President Truman to say: "It is inconceivable that in our democracy any two men can be placed in a position where they can completely stifle our economy and ultimately destroy our country."

Wickser, Philip John, U.S. lawyer (b. Buffalo, N.Y., April 4, 1887—d. Nantucket, Mass., Aug. 14, 1949).

Widdop, Walter, British singer (b. Norland, Yorks., Eng., April 19, 1892—d. London, Eng., Sept. 6, 1949).

Wilbur, Ray Lyman, U.S. educator and cabinet member (b. Boonsboro, Ia., April 13, 1875—d. Stanford, Calif., June 26, 1949), was graduated from Stanford university, and took his medical degree from Cooper Medical college, San Francisco. He became professor of medicine at Stanford in 1909, and dean of the medical school in 1911. He was president of the American Academy of Medicine in 1912–13 and of the American Medical Association, 1923–24.

In 1916 Wilbur became president of Stanford, retaining that position until he retired in 1943 with the lifetime title of chancellor of the university. Meantime, in 1917 he left Stanford to serve as chief of the conservation division of the War Food administration, headed by Herbert Hoover, Wilbur's undergraduate classmate at Stanford.

In 1929, President Hoover named Wilbur secretary of the interior, and under his jurisdiction prompt action was taken to remove the causes and sources of scandal in naval oil reserves that had created public sensations under the Harding administration. Wilbur returned to Stanford after this government service, and was thereafter best known for his leadership in education and public health. (*See* also *Encyclopædia Britannica.*)

Wilgus, William John, U.S. engineer (b. Buffalo, N.Y., Nov. 20, 1865—d. Claremont, N.H., Oct. 24, 1949).

Williams, Sidney Clark, U.S. novelist (b. Wells, Me., May 2, 1878—d. Norristown, Pa., May 24, 1949).

Willis, Bailey, U.S. geologist (b. Idlewild-on-Hudson, N.Y., May 31, 1857—d. San Francisco, Calif., Feb. 19 1949).

Wilson, David Roger, U.S. industrialist (b. Warren, O., Nov. 15, 1874—d. Pontiac, Mich., March 11, 1949), founded with his brother, Charles, in 1914 a gray-iron foundry that grew to become the largest in the world, until the construction of one by General Motors Corp. in 1934. He was named a receiver for the Willys-Overland company in 1933, and became its president under a reorganization plan in 1936

Winn, Matt J., U.S. race-track promoter (b. Louisville, Ky., June 30, 1861—d. Louisville, Oct. 6, 1949), witnessed every Kentucky Derby from 1875 until his death. With a group of friends, he took over Churchill Downs, site of the annual Kentucky Derby, in 1902, and also organized the American Turf association to build up interest in racing apart from the rather exclusive clique that then dominated the sport. From 1915 on, the fame of the Derby grew steadily; purses increased from as little as $4,000 to more than $100,000, while attendance multiplied tenfold. "Colonel" Winn (the title was honorary) helped to popularize parimutuel betting, which became common at tracks throughout the U.S.

Winter, Ezra, U.S. mural painter (b. Manistee, Mich., March 10, 1886—d. Canaan, Conn., April 7, 1949).

Wintringham, Thomas Henry, British politician and author (b. Grimsby, Lincs., Eng., May 15, 1898—d. Searby Manor, Lincs., Eng., Aug. 16, 1949).

Wise, Stephen Samuel, U.S. rabbi and Zionist leader (b. Budapest, Hung., March 17, 1874—d. New York, N.Y., April 19, 1949), was of the fourth generation of rabbis. His family settled in New York city in 1875, and he attended the public schools, College of the City of New York and Columbia university. He took a pulpit at the Congregation B'nai Jashurun, then moved to Portland, Ore., in 1900. In 1906 he resigned in Portland to return to New York to open the Free Synagogue of New York, beginning with Sunday services in the Hudson theatre there.

He was an ardent Zionist, and one of the earliest outspoken critics of Adolf Hitler's anti-Semitism. He was president of the American Jewish congress, a member of the executive board of the Jewish Agency for Palestine, co-chairman of the American Zionist Emergency council, president and founder of the Jewish Institute of Religion, and from 1936 to his death head of the World Jewish congress with headquarters in Switzerland.

Wood, Samuel Grosvenor, U.S. motion-picture director (b. Philadelphia, Pa., July 10, 1884—d. Hollywood, Calif., Sept. 22, 1949), was a real-estate investment broker in California before entering the motion-picture industry. In his 39 years in the industry, Wood directed about 70 pictures, including *Peck's Bad Boy*, with Jackie Coogan; *One Minute to Play*, with Harold ("Red") Grange; *A Night at the Opera*, with the Marx brothers; *Stablemates*; *Our Town*; *Good-Bye, Mr. Chips*; *For Whom the Bell Tolls* (which he considered his outstanding work); *Command Decision*; and his last film, *Ambush*. Among the famous actors whose work he supervised were Rudolph Valentino, Gloria Swanson, Norma Shearer, Marion Davies, Marie Dressler, Gary Cooper, Mickey Rooney, Clark Gable, Joan Crawford and Ingrid Bergman.

Woodruff, Caroline Salome, U.S. educator (b. West Burke, Vt., 1867?—d. Castleton, Vt., July 14, 1949).

Worthing, Archie Garfield, U.S. physicist (b. LeRoy, Wis., Feb. 6, 1881—d. Pittsburgh, Pa., July 30, 1949).

Wright, Walter Livingston, Jr., U.S. educator (b. Lincoln University, Pa., May 15, 1900—d. Princeton, N.J., May 16, 1949).

Xoxe, Koçi, Albanian government official (b. Negovan, Alban., May 1, 1911—d. Tiranë, Alban., June 11, 1949), a blacksmith who became active as a labour leader at Korçë and in 1937 was elected to the municipal council. Intermittently arrested for activities against King Zog I before the Italian occupation, he became in 1941 an organizer of the Albanian Communist party and two years later of the Albanian Liberation army, in which he appointed himself a lieutenant general. On Dec. 2, 1945, he was elected deputy for Korçë to the Albanian constituent assembly, and in Jan. 1946 he became vice-president of the assembly, at the same time succeeding Enver Hoxha as secretary general of the Albanian Communist party. On March 22 of the same year he was appointed deputy prime minister and minister of the interior. Between 1946 and mid-1948 it was Xoxe who held the real power in Albania, Prime Minister Hoxha being largely a figurehead. In July 1947 both Albanian leaders paid an official visit to Moscow, but on Oct. 6, 1948, Xoxe was dismissed as a supporter of Tito's Nationalist heresy and arrested with many political friends. After months of detention, he was tried *in camera* by the supreme court in Tiranë, and on June 10, 1949, was sentenced to death for anti-soviet tendencies. He was shot the following day.

ount, Barton, U.S. army officer (b. Troy, O., Jan. 18, 1884—d. in Oak canyon, northern Ariz., July 11, 1949).

aim, Husni ez- Syrian army officer (b. Aleppo, Syr., 1897—d. Damascus, Syr., Aug. 14, 1949), trained as a cadet in the Turkish army, served under Fakhri Pasha against the Arabs in 1914–18 and was taken prisoner at Medina, Saudi Arabia. In 1920 he joined the French levies in Syria. He commanded a brigade which took part in the fighting ordered by the Vichy government against the Allied forces entering Syria in 1941. After a period of imprisonment under the Allied occupation, he was appointed inspector general of police of the Syrian republic. In May 1948 he became chief of staff in the Syrian army, with the rank of colonel. On March 30, 1949, he led the military coup d'état which overthrew the Shukri al-Quwatli regime. He at first enjoyed great popularity, modelling himself on Kemal Atatürk, with an ambitious program of reforms. By a referendum of June 25 he was elected president of Syria and took the rank of marshal. However, the army turned against him and early in the morning of Aug. 14 he was taken from his residence and shot by a group of officers.

amora y Torres, Niceto Alcalá, former president of the Spanish republic (b. Priego, Sp., July 6, 1877—d. Buenos Aires, Arg., Feb. 17, 1949), was educated in Granada and Madrid universities. In 1917 he became a member of the cabinet, first as minister of public works and later as minister of war. During the agitation against the Spanish royal family in the decade following World War I, he held a moderate course, though he finally in 1930 came out publicly in favour of a republic. He was arrested for conspiracy in Dec. 1930 and spent a short time in jail before his trial in 1931, when he was sentenced to serve six months and a day and paroled. It was under his leadership that the Republicans ordered King Alphonso XIII to abdicate, and Zamora was installed, first as provisional president and later as the first constitutional president of the second Spanish republic. In April 1936 he was removed by a motion of the Socialists on grounds of having illegally dissolved the parliament. In fact, he had angered the extreme leftists in Spain by his middle-of-the-road policies. He was equally out of favour when the Francisco Franco regime acquired power through the Spanish Civil War. He spent the years from 1941 until his death in Argentina.

olnay, George Julian, Hungarian-born sculptor (b. Hungary, July 4, 1863—d. New York city, May 1, 1949).

Obstetrics: *see* GYNAECOLOGY AND OBSTETRICS.

Occupational Therapy: *see* MEDICAL REHABILITATION OF THE DISABLED.

Oceanography.

The wartime emphasis on practical applications finally subsided and during 1949 attention in oceanography shifted largely to the study of more basic problems. The rapid growth of the science was evident from papers presented in a volume of the *Journal of Marine Research*, honouring H. U. Sverdrup on his 60th birthday. The 41 papers contained in the volume together form a summary of much of the work in the marine sciences being carried on in he United States.

Tests of a new current measuring technique, based on the electromotive forces induced by the earth's magnetic field, were announced by the British board of admiralty and the Woods Hole Oceanographic institution, Massachusetts.

Investigations of the Gulf Stream, between Cape Hatteras and Georges bank, showed that the stream follows a meandering course. A portion of the Gulf Stream may move north at the rate of one or two miles per day, while another portion may move south during the same period. The swiftest part of the current, on the inshore edge, is 10 to 15 mi. wide and has a velocity of between four to five knots. Large eddies, appearing to be broken off segments of the main stream, may be found many miles away from the Gulf Stream. The meanderings, eddies and countercurrents associated with the Gulf Stream area would make it difficult to keep a ship in the swiftest porion of the current.

A series of papers, published as a result of a conference on ocean surface waves, showed the development of wave measurements and forecasting of waves on beaches. It appeared that wave forecasts made for the assault beaches during the Normandy invasion were correct 88% of the time. The autocorrelation technique was adapted in a development of statistical methods for studying ocean swell data. A tidal wave warning system was further developed in Hawaii. A network of 18 wave reporting stations was set up. Five of the stations were equipped with seismic sea wave detectors and an automatic alarm system.

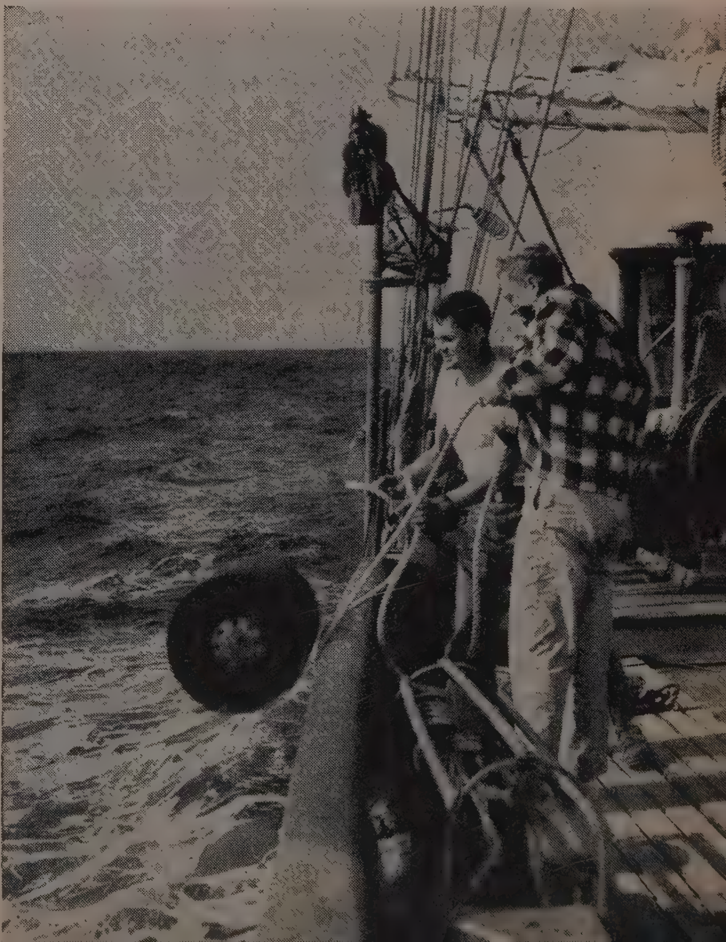
Seismic reflection and refraction methods were adapted for use at sea in Europe and North America. The first reflection from below the ocean bottom was tentatively identified as the base of the unconsolidated sediments. Reasonable estimates indicate negligible cover in some places and thicknesses of several thousand feet in other places. Insufficient data on the velocity of seismic waves in the sediment prevent the confirmation of the estimates. The velocity data must come from suitable refraction studies. The most striking result of seismic refraction observations was the apparent absence of granitic rocks below the western North Atlantic basin.

A total of 4,500 ft. of sediment cores was collected during the 1947–48 cruise on the Swedish vessel "Albatross." A study of the vertical variations in the sediment cores should make it possible to start a reconstruction of the late Pleistocene history of the ocean. Continuous echo-sounding profiles, made in the North Atlantic, presented a number of new geological problems.

Varying rates of rise in mean sea level were observed in North America. On the east coast of the United States sea level had risen about one third of a foot since 1930. The rate was lower on the west coast and higher in the Gulf of Mexico. It was not known if the phenomenon was due to a general rise in sea level, subsidence of the continent or a combination of both.

An exception to the generally accepted rule, that there are no commercially important stocks of fish in deep water was found in the North Atlantic ocean. The Danish research vessel "Dana" found great numbers of fry of the large European redfish (*Sebastes*), in deep water. Adults of the species were found

DEPTH CHARGE being thrown overboard from the research vessel "Atlantis." Seismic waves caused by explosion of the charge were recorded by a second vessel 10-30 mi. away, forming data on the nature of the ocean rockbed. The study was conducted by the Woods Hole Oceanographic institution of Massachusetts in 1949



at depths between 900 to 1,500 ft., far from the coastal banks where they are best known.

Two large-scale fishery investigations were started in the Pacific ocean. The Scripps Institution of Oceanography, La Jolla, Calif., undertook an intensive investigation of the waters off the west coast of the United States, to a line 400 mi. offshore. The U.S. fish and wildlife service, with headquarters at the University of Hawaii, Honolulu, began a study of high seas fisheries. (*See* also MARINE BIOLOGY.)

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Office of Education, U.S.: *see* EDUCATION; FEDERAL SECURITY AGENCY.

Ohio. A north central state of the United States, popularly known as the "Buckeye state," Ohio officially became a state of the union on Feb. 19, 1803. Area: 41,222 sq.mi., including 100 sq.mi. of water; pop. (1940): 6,907,612, of whom 2,294,626 were rural and 4,612,986 urban; native white 6,047,265, foreign-born white 519,266, Negro 339,461, other races 1,620. Capital: Columbus. The principal cities with their populations as shown in the 1940 census and later estimates are: Cleveland 878,336 (1948 est., 910,925), Cincinnati 455,610 (1949 est., 510,000), Columbus 306,087 (1949 est., 347,350), Toledo 282,349 (1949 est., 317,000), Akron 244,791 (1949 est., 300,000), Dayton 210,718 (1949 est., 260,000), Youngstown 167,720 (1949 est., 175,000), Canton 108,401 (1949 est., 137,500). In 1949 the bureau of the census estimated the population of the state at 7,989,000.

History.—Ohio's 98th general assembly held the longest session in the state's history—108 working days. When it officially adjourned July 29, 1949, it was called the "billion-dollar legislature," for it approved the expenditure of about that amount. That expenditure included $647,000,000 for general appropriations, $99,000,000 for capital improvements and more than $250,000,000 in rotary, liquor-store and highway funds.

Although it won a reputation for rejecting demands of organized lobbies, the general assembly passed considerable important legislation. Among other items it established a turnpike commission, created a department of natural resources, reduced the majority percentage required for the passage of bond issues and tax levies, increased unemployment compensation payments, simplified election laws, liberalized compensation to injured workmen, established a defense corps to supplement the national guard, changed the automobile drivers' licence system, increased salaries of many state employees, gave Christian Science practitioners the right to charge fees, increased payments to local governments, regulated the sale of barbiturates, equalized real estate property valuations throughout the state and gave cities authority to operate parking areas.

Three issues were placed before Ohio voters in the Nov. 8, 1949, election. They approved two of them, permitting the sale of coloured oleomargarine in the state and replacing the party-column ballot with the office-type ballot. The third issue, a proposed constitutional amendment which would have allowed more than one probate judge for each county, was rejected.

State officers in 1949 were: governor, Frank J. Lausche (D.); lieutenant governor, George D. Nye (D.); secretary of state, Charles F. Sweeney (D.); auditor, Joseph T. Ferguson (D.); treasurer, Don H. Ebright (R.).

Education.—In 1949 the state had 3,300 elementary schools with a total enrolment of 741,549 and a teaching staff of 23,355; 1,119 secondary schools with an enrolment of 324,168 and a teaching staff of 15,490; 114 junior high schools with a total enrolment of 66,892 and a teaching staff of 2,547. Kindergarten pupils numbered 53,291 and kindergarten teachers 11,306.

The six state universities were: Ohio State university at Columbus; Ohio university at Athens; Kent State university at Kent; Miami university at Oxford; Bowling Green State university at Bowling Green; and Wilberforce university at Wilberforce.

The state director of education in 1949 was Clyde Hissong.

Social Insurance and Assistance, Public Welfare and Related Programs.—The average number of recipients of general relief in Ohio in 1949 was 32,671 and the total assistance extended (December estimated in each case) was $18,467,238. The average number receiving aid for the aged was 125,568 and they received $70,314,036; aid to dependent children 12,486 cases, received a total of $9,921,986; aid to the blind 3,639 cases, received a total of $1,947,182. Unemployment compensation claims rose sharply at the close of 1949. Benefits paid by the bureau of unemployment compensation in Nov. 1949 totalled $9,604,437, an increase of 3% over October. Dependency allowances in addition to unemployment compensation were started in September and in the first three months of this program $1,425,935 was paid out.

Ohio has four penal institutions with an average daily population in 1949 of 8,648; and two industrial schools with an average daily population of 928. The total operating cost of all welfare department institutions in 1949 was estimated at $26,372,000.

Communications.—Ohio had 85,517 mi. of highways in 1949 outside of municipalities. Of this total, 16,065 mi. were classified as rural, 28,798 mi. as county and 40,654 mi. as township. Total state expenditures on highways in 1949 were estimated at $80,000,000.

The state had 8,400 mi. of railroads, 360 airports and landing fields, 3,500 mi. of certificated air-line routes within its boundaries and an estimated 2,500,000 telephones in 1949.

Banking and Finance.—There were 423 state and private banks in Ohio with deposits (Oct. 17, 1949) of $3,961,880,203 and resources of $4,282,576,357. There were 241 national banks in the state with deposits (June 30, 1949) of $3,235,255,000 and resources of $3,482,064,000. State-chartered savings and loan associations numbered 486 with total resources (June 30, 1949) of $1,237,924,904. There were 131 federal savings and loan associations with total assets (estimated as of Dec. 31, 1949) of $680,569,750.

The state budget for the 1949–51 biennium was $629,180,804. It is unconstitutional for the state to have a debt except for $200,000,000 for a soldiers' bonus for which special provision was made.

Agriculture.—The total harvested acreage of principal crops in Ohio in 1949 was 10,850,000; in 1948 it was 10,821,000. Total cash receipts from farm marketings in Ohio in 1949 through October were $753,979,000 as compared with $868,713,000 in the same period of 1948, according to the United States department of agriculture. The 1949 marketing receipts consisted of $516,112,000 from livestock and products and $237,867,000 from crops.

Weather conditions again were favourable in the state and the harvested acreage was the largest in more than 20 years of record. Fruit and soybean yields were exceptionally high.

Table I.—*Leading Agricultural Products of Ohio*

Crop	1949	1948	Average, 1938–47
Corn, bu.	202,552,000	215,924,000	160,389,000
Wheat, bu.	60,002,000	57,648,000	43,274,000
Oats, bu.	48,024,000	54,090,000	40,495,000
Barley, bu.	464,000	540,000	774,000
Rye, bu.	270,000	360,000	869,000
Buckwheat, bu.	248,000	304,000	300,000
Popcorn, lb.	20,425,000	54,600,000	19,929,000
Hay, tons	3,556,000	3,516,000	3,714,000
Soybeans, bu.	20,592,000	18,614,000	16,276,000
Tobacco, lb.	29,220,000	28,160,000	24,165,000
Sugar beets, tons	247,000	161,000	290,000
Maple syrup, gal.	150,000	111,000	208,000
Apples, bu.	5,446,000	1,936,000	3,875,000
Peaches, bu.	1,194,000	780,000	843,000
Pears, bu.	272,000	178,000	322,000
Grapes, tons	15,800	11,000	15,650
Cherries, tons	1,910	1,760	2,705
Potatoes, bu.	6,270,000	6,765,000	8,600,000

Manufacturing.—The total value added by manufacture in Ohio in 1947 was $6,359,006,000 compared with $2,116,434,000 in 1939, according to the census of manufactures made by the bureau of the census of the

Table II.—*Principal Industries of Ohio*

	Value added by manufacture	
	1947	1939
Food and kindred products	$413,216,000	$182,183,000
Tobacco manufactures	14,504,000	5,804,000
Textile-mill products	58,183,000	23,803,000
Apparel and related products	127,753,000	52,392,000
Lumber and products, excl. furniture	37,521,000	14,924,000
Furniture and fixtures	128,293,000	29,484,000
Paper and allied products	199,107,000	61,057,000
Printing and publishing industries	322,283,000	147,174,000
Chemicals and allied products	347,226,000	110,516,000
Petroleum and coal products	95,811,000	30,369,000
Rubber products	381,215,000	141,067,000
Leather and leather products	68,293,000	33,972,000
Stone, clay and glass products	293,881,000	112,442,000
Primary metal industries	852,772,000	331,973,000
Fabricated metal products	634,746,000	192,628,000
Machinery (except electrical)	1,251,011,000	351,070,000
Electrical machinery	471,593,000	116,775 000
Transportation equipment	483,421,000	125,225,000
Instruments and related products	41,381,000	10,219,000
Miscellaneous manufactures	136,796,000	43,357,000

Table III.—*Principal Mineral Products of Ohio*

Mineral	Value, 1948	Value, 1947
g iron	$469,653,906	$380,383,106
tuminous coal	142,972,000	131,344,763
oke	128,843,686	98,973,704
lay and clay products	60,918,000	51,348,000
one	27,552,017	23,633,433
erroalloys	21,852,890	15,976,882
me	21,473,401	17,685,220
ement	20,496,930	16,611,421
and and gravel	15,149,848	14,195,288
etroleum	13,733,000	10,440,000
atural gas	12,901,000	13,548,000
alt	5,884,343	6,815,639

nited States department of commerce. The average number of producon workers in 1947 was 988,446 and they were paid wages totalling 2,727,481,000.

Mineral Production.—The total value of mineral production in Ohio in 948, exclusive of pig iron, ferroalloys and coke, was $328,228,000, comared with $291,960,000 in 1947, according to the U.S. bureau of mines. (P. By.)

Oil: *see* Petroleum.

Oils and Fats, Vegetable and Animal: *see* Vegetable Oils and Animal Fats.

Oklahoma. A west south central state of the United States, Oklahoma was admitted as the 46th state on Iov. 16, 1907. The name "Oklahoma" is from the Choctaw ndian words meaning "red people," and was first applied to the ndian territory in 1866. The popular name "Sooner state" was rom the term "sooner" used in referring to a person who ntered and staked a claim sooner than the law allowed when he first public lands in the Indian territory were opened by he run for homesteads, April 22, 1889. Area: 69,283 sq.mi., ncluding 387 sq.mi of water surface. Pop. (1940): 2,336,434, f which approximately 62% was rural. Approximately 87% vas white, 7% Negro, 4% Indian, 2% foreign-born. On July 1, 949, the U.S. census bureau estimated the civilian population f Oklahoma at 2,302,000. Oklahoma City, the capital, with a opulation of 291,003 (1948 report, chamber of commerce), and 'ulsa, referred to as the "Oil Capital of the World," with a opulation of 256,430 (1948 report, chamber of commerce), are he two largest cities.

History.—Important enactments of the 22nd state legislature, n session from January to May, 1949, included provisions for he biggest program for highway construction in the history of he state, for free textbooks in the first to the eighth grades of he public schools, for reorganization of the state board of agriulture making the president of the board an appointive instead f an elective office and for a state-wide special election to vote n the governor's $36,000,000 bond issue proposal for improveient and construction of buildings at state institutions. The ond issue won by a large majority in the special election on ept. 27, and was vitalized by a special session of the state legisature, Nov. 28 to Dec. 22. Oklahoma voted for prohibition of he liquor traffic for the fifth time in its history, the question aving been submitted in the special election on Sept. 27, 1949, rough petition of the dry forces, and winning by a majority f 55,400 of the 590,670 votes cast. Chief state officers in 1949, ll Democrats elected in Nov. 1946, were Roy J. Turner, govrnor; James E. Berry, lieutenant governor; Wilburn Cartright, secretary of state; A. S. J. Shaw, auditor; Mac Q. Wilamson, attorney general; John D. Conner, treasurer; Oliver Iodge, superintendent of public instruction.

Education.—The total enrolment in Oklahoma public schools (term of 948–49) was 556,841 pupils (elementary and high school), with 18,376 aching positions. The cost of maintaining the elementary and high hools in the state was approximately $59,000,000. State institutions of gher learning included the University of Oklahoma (Norman) and the klahoma Agricultural and Mechanical College (Stillwater), both gradue schools; and Oklahoma College for Women (Chickasha), Panhandle gricultural and Mechanical college (Goodwell), Langston university Negro, at Langston), and six colleges primarily for teacher training Ada, Alva, Durant, Edmond, Tahlequah, Weatherford), all state-owned nior colleges. There were 22 two-year junior colleges accredited by the state committee, of which 7 were state-owned (including the military academy at Claremore), 4 were independent with church affiliations and 11 were municipal. There were also 6 independent senior colleges with church affiliations.

Social Insurance and Assistance, Public Welfare and Related Programs.—For Dec. 1949, the Oklahoma department of public welfare reported 101,137 persons receiving old-age assistance with an average of $51.60 each per month (total $5,268,229); 23,841 families receiving aid, with an average of $51.75 per family for 60,205 children (total $1,233,755); and 2,723 blind persons receiving an average of $53.14 each per month (total $144,690). State supported institutions included two tuberculosis sanatoriums, eight hospitals (including six mental, one school for mental defectives and one epileptic hospital), two orphanages, three schools for deaf and blind, four schools of correction, one penitentiary and one reformatory.

Communications.—The Oklahoma department of highways spent during the period from Jan. 1, 1949, to Nov. 30, 1949, on contract construction a total of $31,906,469.13 and was responsible for a highway system of 10,143 mi. The total public open-road mileage in Oklahoma for 1949 was approximately 100,000 mi. Railroad and electric mileage approximated 6,165 mi., not including sidings.

Agriculture.—The Oklahoma national stockyards (Oklahoma City) reported receipts of cattle and calves Jan. 1 to Dec. 30, 1949, inclusive, totalled 721,276 head, 15% less than receipts for the same period in 1948. The total acreage of Oklahoma crops harvested in 1949 was about the same as 1948 (13,312,000 ac.). Wheat production in 1949 was the third largest on record, with a value of $159,705,000, which was $38,219,000 less than the 1948 crop. The value of 25 Oklahoma crops and commercial truck crops was $386,039,000 in 1949, or about 9% less than for the same crops in 1948, the decline resulting from smaller production of most crops and to declines in the season average price.

Leading Agricultural Products of Oklahoma

	1949	1948	Average 1938-47
Wheat, bu.	88,725,000	98,962,000	67,428,000
Corn, bu.	29,392,000	32,125,000	28,382,000
Oats, bu.	17,460,000	16,608,000	27,370,000
Peanuts, lb.	100,800,000	153,000,000	75,851,000
Grain sorghums (forage), tons	1,008,000	1,214,000	1,417,000
Grain sorghums, bu.	10,362,000	9,680,000	8,471,000
All hay, tons	1,880,000	2,010,000	1,536,000
Cotton, bales	620,000	374,000	521,000

Manufacturing.—The Oklahoma employment security commission reported total wages paid for covered employment in Oklahoma's manufacturing industry group during the six-month period Jan. 1 to June 30, 1949, were $89,104,756, with a monthly average of 60,649 persons employed. In addition to the manufacture of petroleum by-products, manufactures included lumber, cement, products from glass sands and clays and printing products.

Mineral Production.—Minerals produced in Oklahoma included petroleum, natural gas, natural gasoline, liquefied petroleum gases, asphalt, zinc, lead, stone, sand and gravel, clay, salt, volcanic ash, wool rock, gypsum and natural crystallized calcium. The State Corporation commission reported 151,397,986 bbl. of petroleum produced in Oklahoma in the period Nov. 1, 1948, to Nov. 1, 1949. An estimated production report in Jan. 1948, of other minerals in the state for the previous year was 440,000,000 cu.ft. natural gasoline and products, 420,000,000 cu.ft. natural gas, 18,000 tons lead concentrate, 103,000 tons zinc concentrate, 3,050,000 tons coal. (M. H. W.)

Old-Age Insurance: *see* Social Security.

Old-Age Pension: *see* Relief; Social Security. *See* also under various states.

Oleomargarine: *see* Vegetable Oils and Animal Fats.

Olives: *see* Fruit.

Oman and Muscat (Masqat): *see* Arabia.

Ontario. Second largest Canadian province, and one of the two central provinces, Ontario joined the confederation in 1867. With an area of 412,582 sq.mi., it had a 1941 population of 3,787,655 (1949 est. 4,411,000). The chief cities are Toronto, provincial capital (pop. 1948) 747,671; (with 1946 est. pops.) Hamilton (178,686), Ottawa (165,362), Windsor (119,823).

History.—In April 1949 the interim premier Thomas L. Kennedy was replaced by the provincial treasurer Leslie Frost, who, in a Progressive Conservative leadership convention, won out on the first ballot over three other contenders. With some slight changes, the former cabinet was reinstated and later enlarged. There were two by-elections during the year, both won by the government, which held 53 out of 90 seats at the year's end.

Proroguing the stormiest legislative session in years, the lieutenant governor gave royal assent to 146 bills. Charitable foundations were debarred from owning more than 10% interest in any business, and had to comply by 1956; margarine colouring was limited to 1.6°; teachers' pensions were increased from 60% to 70% of salary; a provincial alcoholic research foundation was created; financial aid was voted to municipal fire and police departments, and to community centres.

Education.—Provincial educational grants for 1949 ran to $36,500,000, which was $3,300,000 higher than 1948. The latest revised statistics available in 1949 were the following for 1946 provincially controlled schools: total enrolment 666,451; average daily attendance 590,801; teachers 22,353; total revenue $68,684,669.

Health and Welfare.—During 1949 the provincial government spent an estimated $30,600,000 on health services, in addition to the federal grants allocated to Ontario. A $30,000,000 hospital expansion program got under way, to provide an additional 7,740 beds. Old-age pensions were increased from $30 to $40, following the federal legislation increasing the basic monthly figure.

Finance.—The government ended the 1947–48 fiscal year with a $25,628,752 surplus on ordinary account. Net ordinary revenue was $191,698,952 and expenditures were $161,182,392, plus $1,887,806 for direct relief. The gross provincial debt stood at $628,388,019.

Agriculture.—The provincial department of agriculture reported there were 179,000 farms with 500,000 persons depending directly on agriculture. Cash income from the sale of farm products for the first two months of 1949 was $295,520,000, compared with $288,472,000 for the same 1948 period.

Labour and Industry.—Legislation passed during the 1949 session increased workmen's compensation from two-thirds to three-quarters of average earnings. Industrial expansion continued unabated, and in July it was announced that within the preceding 12-month period 130 existing companies expanded their facilities, and 75 new companies launched operations, involving expenditures of more than $100,000,000 and providing 20,000 new jobs. At the end of 1949 the provincial government reported that 1949 capital investment in Ontario was about $1,600,000,000, or roughly half of the national total capital investment.

Mining.—Discovery of high-quality asbestos in northern Ontario resulted in a $3,000,000 investment to open production. Many more than 3,000 uranium claims were staked along the north shore of Lake Superior. An $8,000,000 operation to open the new Steep Rock lake iron ore bodies was begun. At the year end prospects were that 1949 mineral values would far exceed 1948 values, which were $286,658,000.

Tourist Industry.—During 1948 more than 20,000,000 Americans visited Ontario and spent about $175,000,000. To increase the appeal of the 52 different vacation districts, highway expansion was pushed. Construction and maintenance for 1949 cost $69,000,000, compared with $65,000,000 for 1948. (C. CY.)

Opera: *see* MUSIC.

Opium: *see* NARCOTICS AND NARCOTIC TRAFFIC.

Oranges: *see* FRUIT.

Oregon.

A state of the United States, located in the Pacific northwest, Oregon was admitted Feb. 14, 1859, as the 33rd state of the union. Area 96,981 sq.mi., including 631 sq.mi. of water. Pop. (1940) 1,089,684; the estimate of the bureau of the census for July 1, 1949, was 1,736,000. Capital, Salem (1940 census 30,908); chief city, Portland (1940 census 305,394).

Elective state officials (administrative) in 1949: governor, Douglas McKay; secretary of state, Earl T. Newbry; state treasurer, Walter J. Pearson; attorney general, George Neuner; labor commissioner, W. E. Kimsey; superintendent of public instruction, Rex Putnam.

History.—The 45th legislative assembly of the state convened in Jan. 1949 and remained in session for 97 days, the longest in the history of the state. Important new legislation included: an increase in the state tax on gasoline of one cent per gallon, doubling of the motor-vehicle licence fee (to $10 per annum) and adoption of a permanent system for car licence plates. Benefits were increased for claimants under the workmen's accident insurance and unemployment compensation law. A fair employment practice law was adopted, banning discrimination in employment on grounds of race, colour or creed. Employment of Communists by the state was prohibited. Legislation was passed to implement a state program for rehabilitation of burned-over and cutover forest lands, the financing of which by issuance of bonds had been approved by the voters in 1948. A community property law was repealed; also laws restricting the property rights of aliens.

Two legislative enactments were suspended by invocation of the referendum: one banned daylight saving time except on a state-wide basis after proclamation by the governor; the other provided for a minimum of $50 per month for old-age assistance but made such grants a preferred claim against estates of recipients. These were to be voted on by the people in Nov. 1950.

Education.—Enrolment in public schools during the school year 1948–49 was 272,804, including 67,561 in high schools. The number of teachers was 10,050. The total value of all public-school property amounted to $96,670,712.

Enrolment at six state institutions of higher learning, 1948–49, totalled 19,409, not including 14,611 enrolled in extension classes. Expended in capital outlay by these institutions during the biennium 1947–49 was $8,300,000.

Social Insurance and Assistance, Public Welfare and Related Programs.—Payments for unemployment compensation in 1948 amounted to $7,744,169. Expenditures for public-welfare programs during the biennium 1947–49 (old-age and general assistance, aid to dependent children and to blind) totalled $44,074,467.

The number of inmates (1949) and operating expenditures in the biennium 1947–49 for state charitable, eleemosynary, penal and correctional institutions was as follows: two state mental hospitals, 4,215, $4,169,178; penitentiary, 1,351, $1,149,293; Fairview home for feebleminded, 1,197, $1,511,212; boys' training school, Woodburn, 134, $526,492; Hillcrest girls' training school, 66, $242,855; three tuberculosis hospitals, 415, $1,768,963; school for blind, 73, $195,183; blind trade school, 24, $161,829; school for deaf, 145, $332,870.

Communications.—The steam railway mileage Dec. 31, 1948, exclusive of second main track, sidings, etc., was 3,438.55. As of Dec. 31, 1948, there were 7,298 mi. of highways in the state system of which 6,765 mi. were surfaced; and 35,551 mi. of county roads of which 15,827 mi. were surfaced. A total of $34,658,293 was expended by the state highway commission for construction during the biennium ending June 30, 1949.

The number of motor vehicles registered on June 30, 1949, was 602,593. The number of telephones reported in service Dec. 31, 1948, was 376,426.

Finance.—The state bonded debt as of July 1, 1949 was: gross $27,724,440; net $2,425,000. The gross debt of municipal subdivisions July 1, 1948, was $111,121,805; the net was $99,735,617. Total state revenues for the year ending June 30, 1949, were $119,257,255. The assessed valuation of the state in 1949 was $1,539,029,071, the highest on record. The aggregate of the approved state budget for 1949–51 for all purposes was $424,198,694.

Total bank deposits as of June 30, 1949, were $153,162,700, compared with $156,025,372 on June 30, 1948. Bank debits for first nine months of 1949 were $7,810,492,865 and for same period in 1948 $8,538,332,741.

Agriculture.—Estimated cash receipts from farm marketings for the year 1948 totalled $390,758,000, including $4,196,000 of government payments. Preliminary reports for 1949 indicated a decrease of about 10% from 1948 returns.

Principal Agricultural Products of Oregon

Crop	1949	1948	Average 1938–47
All wheat, bu.	23,203,000	29,954,000	21,187,000
Oats, bu.	11,088,000	7,497,000	9,508,000
Barley, bu.	9,933,000	12,800,000	7,872,000
Corn, bu.	1,095,000	1,050,000	1,565,000
Potatoes, bu.	11,180,000	11,480,000	9,569,000
Apples, bu.	3,010,000	2,668,000	2,864,000
Pears, bu.	6,150,000	4,825,000	4,531,000
All cherries, tons	34,300	20,200	22,015
All prunes, tons	100,900	48,800	82,160

Mining.—The preliminary estimate of the U.S. bureau of mines for mineral production for 1948 was $24,980,000, of which metallic production was valued at $630,000. The total value was up 55% over 1947.

Manufacturing.—The bureau of the census report on manufactures for 1947 showed 3,075 establishments in the state employing 92,144 production workers, with total wage rolls of $265,834,000 and value added by manufacture amounting to $675,017,000.

The total volume of timber cut in 1948, not including that cut for poles and piling, was 8,395,371,000 bd.ft. Production of lumber was 7,842,402,000 bd.ft., highest of any state in the nation; of plywood, 624,000 sq.ft. Lumber production for the first nine months of 1949 showed a decrease of about 10% from 1948. (C. A. SP.)

Organization for European Economic Cooperation.

Formed in 1947 to co-operate in carrying out the United States' European Recovery program (ERP), O.E.E.C. in 1949 was active in promoting intra-European economic co-operation and in studying the problem of the economic integration of western Europe. Its membership was enlarged to 19 by the admission of the West German republic, which, on Dec. 15, signed an agreement with the Economic Cooperation administration (ECA). On April 13 Paul-Henri Spaak of Belgium had been re-elected as president of he O.E.E.C. council but was succeeded by Paul van Zeeland, ew Belgian foreign minister, Aug. 16. In order to gear in .E.E.C. recommendations with the actions of member governments a steering committee of eight ministers of foreign affairs f foreign trade was created in February, and normally met hereafter at two months' intervals.

In a January report the council recommended the sum of 4,347,000,000 of ERP aid to European reconstruction in 1949–0 and submitted a proposed allocation of dollar funds among s members. A supplementary report expressed moderate hope hat Europe could balance its trade with the dollar area after 952, on the basis of a 30% increase in production over the 948 level. When a special screening committee undertook in ugust to revise the 1949–50 program downward, in accordance vith the expected action of the United States congress, ECA dministrator Paul Hoffman rejected the O.E.E.C. recommen-ations and declared that ECA must take the responsibility of naking a final allocation of dollar aid among the recipients. fter studying the question of allocation of aid for 1950–51 .E.E.C agreed in November that with the exception of Greece, vhere the civil war had left special needs, the member countries vould divide dollar aid on the proportionate basis which had een negotiated so laboriously in August, and would base their lanning on the assumption of a 25% reduction in ERP as-istance, from the 1949–50 level.

Throughout the year O.E.E.C. devoted its primary attention o the twin problems of promoting freer intra-European trade nd freer exchange of currencies. The program, approved by he steering committee and adopted by the council of O.E.E.C. n March, called for promotion of financial and monetary sta-ility, freeing of intra-European trade and exchange and review f national investment programs in the light of the needs of he European economy as a whole.

Throughout May and June O.E.E.C. carried on intensive egotiations concerning the renewal and revision of the intra-European payments agreement of Oct. 1948, due to expire on une 30. The basic problem was how to arrange for country A for example), which had an export surplus in trade with coun-ry B, to transfer part of that favourable balance to cover pur-hases in country C, with which country B had a favourable alance. The proposals discussed also assumed that a part of he drawing rights thus transferred would consist of dollar redits held by the debtor country. Great Britain, which had a arge trade deficit with both the O.E.E.C. and dollar areas, was eluctant to enter into any extensive agreement of this nature.

On June 30 the O.E.E.C. council agreed to the transferability f 25% of intra-European credit balances. This would allow up o 25% of either intra-European drawing rights or conditional ollar aid, at the choice of the debtor country, to be transferred o any of its O.E.E.C. creditors. An agreement based on this rinciple was signed by the council in September. During De-ember the staff of O.E.E.C. was engaged in elaborating an im-roved plan of trade payments, scheduled to come into force n July 1, 1950. In order further to free intra-European trade, .E.E.C. proposed to establish a "clearing union" as a con-inuing arrangement facilitating the multilateral settlement of ayment balances within the O.E.E.C. area. It proposed that part of ECA aid for 1950–51 be set aside to finance the learing union, which would operate under the International Monetary fund.

Another major barrier to the freer movement of goods in ntra-European trade was the continuance of quantitative re-trictions or import quotas. In July O.E.E.C. urged its member tates to remove all such restrictions as rapidly as possible. t asked them to submit by Oct. 1: (1) lists on commodities f which they were prepared to abolish all import restrictions or to establish "global quotas" nondiscriminatory with respect to individual trading partners; and (2) lists of commodities on which they were willing to relax quota restrictions in return for reciprocal relaxations by one or more O.E.E.C. countries.

During September and October numerous restrictions were abolished by the principal trading countries, but it was felt that the volume of trade affected by this relaxation was not extensive. In October O.E.E.C. announced a list of quotas subject to elimination, covering about 25% of intra-O.E.E.C. trade. The O.E.E.C. council also approved a British recommendation that member governments remove one-half of the remaining quantitative restrictions by Dec. 15.

In December the O.E.E.C. staff was elaborating, for submission to the council, a plan which called for removal of 80% of intra-O.E.E.C. import quotas by June 30, 1950, and the elimination of the remaining quotas by June 30, 1951. At the close of the year some observers felt that the useful effect of gradual removal of trade quotas was being offset in part by the revival of marketing agreements based on intra-European cartel agreements and believed that O.E.E.C. would also have to take up cartel restrictions if a genuinely free European market was to emerge from its efforts. In addition, the persistence of a two-price system—higher prices for export than for domestic users—in basic commodities such as coal and steel was considered a serious obstacle to the abolition of quota and cartel arrangements.

Some Europeans and many Americans felt that these steps toward freeing intra-European trade from quota and currency restrictions pointed the way to the creation of a single large European market, able through competitive advantages in large-scale production to compete with the U.S. economy in the world market and to assure a rising standard of living for its peoples. Faced by the political pressure of the soviet bloc and assisted by U.S. aid to plan its reconstruction on a wider regional basis, Europe should now, it was urged, use this unique opportunity to develop a large and internally free and competitive market. Intra-European integration could also be supplemented by U.S. assistance in developing the economic potential of the European dependencies and colonies, under Pres. Harry S. Truman's Point Four program.

In August ECA Administrator Hoffman urged the O.E.E.C. council to act boldly in creating a single market. The resulting improvement in European productivity would, he felt, raise Europe's dollar earnings from a level of $1,250,000,000 to around $4,000,000,000 annually, and thus enable it to do without direct dollar aid after 1952. In an address to the O.E.E.C. council in October, Hoffman urged even more strongly the importance of the integration of the European economy.

On behalf of Great Britain Sir Stafford Cripps set forth certain serious limitations on his country's ability to integrate its economy with that of the continent. Britain had to work with the economy of the British commonwealth and the sterling bloc as well as with western Europe and therefore could not go much beyond completing the O.E.E.C. arrangements for freer trade and clearing. Robert Schuman of France expressed more enthusiasm for European integration and urged the establishment of a number of smaller regional units within Europe as a preparation for a united European system. Whether such regional systems, once formed, would harden and become obstacles to a wider European economic union remained a matter of speculation.

During 1949 the implementation of the agreement to establish Benelux, an economic union of Belgium, the Netherlands and Luxembourg, met with numerous obstacles arising from differences in trade and currency policies and from the different status of the Dutch and Belgian overseas dependencies.

The proposed Franco-Italian customs union remained in the discussion stage. However, in November Schuman explored with the Benelux representatives, at The Hague, Neth., a proposal for a wider customs and monetary union between Benelux, France and Italy, and the following month Schuman announced that the five countries were on the verge of signing an agreement as a first step toward economic union. From Dec. 14 to 17 British and Scandinavian representatives met at Stockholm, Swed., to discuss an Anglo-Nordic economic union; preliminary reports of the problems raised by this proposal were not encouraging.

At the close of 1949 O.E.E.C. pointed to the continued serious lag in solving the dollar deficit of European trade. As it became increasingly clear that Europe would not be able by 1952 to balance its trade with the dollar area and was also unable to maintain a high level of economic activity without large imports from that area, the problem of adjusting the European economy to post-1952 stresses was at the forefront of O.E.E.C. concern. (*See* also EUROPEAN RECOVERY PROGRAM.)

(P. E. M.)

Organization of American States.

At the beginning and again at the end of the year 1949 the Organization of American States was confronted with international situations that threatened the peace of the continent and required the application of the inter-American treaty of reciprocal assistance. This treaty, which was signed at Rio de Janeiro, Braz., on Sept. 2, 1947, and came into force on Dec. 3, 1948, is a mutual assistance pact under which the signatory states agree to act collectively in the event of an aggression or threat of aggression against any one of them.

The first application of the treaty occurred in Dec. 1948, when the government of Costa Rica alleged that its territory had been invaded by armed forces proceeding from Nicaragua. The Council of the Organization of American States, acting provisionally as the organ of consultation under the Rio de Janeiro treaty, sent a diplomatic commission of investigation, composed of representatives of Brazil, Colombia, Mexico and the United States. In Jan. 1949, following the presentation of the report of the diplomatic commission, the Council of the Organization made a series of recommendations and sent a commission of military experts to Costa Rica and Nicaragua to observe the application of its proposals. This group was composed of representatives of the four countries that comprised the diplomatic commission and Paraguay. A pact of amity was signed on Feb. 21, 1949, and subsequently ratified by both governments.

The situation in the Caribbean generally continued to be a disturbing factor throughout the year and culminated in Jan. 1950 with the invocation of the Rio de Janeiro treaty by Haiti against the Dominican Republic, and by the latter country against both Haiti and Cuba. Before this action was taken and while a definite solution of the Costa Rica-Nicaraguan dispute was still pending the government of Haiti sought to have recourse to the Rio de Janeiro treaty, alleging that the Dominican Republic was permitting its territory to be used for radio broadcasts that threatened the peace of the two countries. At that time, Feb. 1949, the Council of the Organization decided not to apply the treaty and the government of Haiti thereupon requested the good offices of the Inter-American Peace committee, composed of representatives of Argentina, Brazil, Cuba, Mexico and the United States. The committee sent a delegation to the two countries, following which representatives of the two governments signed a joint declaration on June 11, 1949. Although by this statement the two governments undertook to settle by peaceful means any difference that might arise between them, no permanent solution was found, and on Jan. 6, 1950, the Council of the Organization decided to proceed in accordance with the provisions of the treaty. This action was taken at the request of Haiti, which invoked the treaty against the Dominican Republic, and also at the request of the Dominican Republic, which made charges against both Haiti and Cuba. Acting provisionally as the organ of consultation, the Council of the Organization appointed an investigating commission of five members, composed of representatives of Bolivia, Colombia, Ecuador, the United States and Uruguay, to make an on-the-spot investigation.

The United States also sought to bring about an improvement in the Caribbean when it proposed that the Inter-American Peace committee undertake a study of the general situation in that area. Such a study was made and on Sept. 14, 1949, the committee issued a declaration of 14 points, reaffirming the basic principles of American peace and solidarity and calling upon the governments of the Caribbean to observe them.

During 1949 further steps were taken to complete the structure of the Organization of American States in accordance with the charter signed at Bogotá, Colombia, in 1948. The Council of the Organization drafted the statutes of the Inter-American Council of Jurists and the Inter-American Cultural council, and made arrangements for these agencies to hold their first meetings during 1950. The statutes of the Inter-American Economic and Social council, which had been functioning since 1945 and which constitutes the third of three technical subsidiary agencies of the Council of the Organization, were also revised.

In accordance with the Bogotá charter the Council of the Organization concluded agreements with the Pan American Institute of Geography and History and the International American Institute for the Protection of Childhood, both of which were classified as inter-American specialized organizations. Such classification was also given to the Inter-American Institute of Agricultural Sciences. The council also negotiated an agreement with the Inter-American Statistical institute, under the terms of which the secretariat of the institute was transferred to the Pan American Union. Negotiations were initiated with the Pan American Sanitary organization, the Inter-American Indian institute and the Inter-American Commission of Women, intended to define their relations with the council.

Under resolutions adopted at the ninth International Conference of American States, the Council of the Organization was also authorized to make a study of other inter-American agencies and to make recommendations with reference to those whose continued existence was no longer considered necessary. Pursuant to this authorization, the Emergency Advisory Committee for Political Defense, which had been set up during World War II to control activities of foreign agents against the war effort of the American republics, was abolished in 1948. During 1949 the council terminated the activities of the Inter-American Trade Mark bureau, the Central Pan American Bureau of Eugenics and Homiculture and the Permanent American Aeronautical committee. The Inter-American Coffee commission and the Inter-American Development commission were abolished and their functions transferred to the Pan American Union and the Inter-American Economic and Social council.

In accordance with resolution XXXIII of the Bogotá conference, the council convoked the American Committee on Dependent Territories to assemble in Havana, Cuba, on March 15, 1949. The committee was in session until July 21, 1949. A report on its work was transmitted to the council.

On Nov. 16, 1949, Ambassador Luis Quintanilla, representative of Mexico, and Ambassador Hector David Castro, representative of El Salvador, were chosen chairman and vice-chairman respectively of the Council of the Organization for 1950.

(W. MR.)

steopathy. The 75th anniversary of the founding of osteopathy was celebrated in 1949. It was on June 2, 1874, that Dr. Andrew Taylor Still, a pioneer frontier hysician, had announced the principles upon which he based is philosophy and practice of the prevention, diagnosis and eatment of human disease.

Enrolment in the six accredited osteopathic colleges in the nited States, located in Chicago, Ill., Des Moines, Ia., Kansas ity and Kirksville, Mo., Los Angeles, Calif., and Philadelphia, a., numbered approximately 1,900 students. The colleges adnitted 504 freshmen in the 1949 fall class, chosen from more nan 2,000 qualified applicants.

Expansion of the teaching facilities of the colleges and their ssociated clinical hospitals continued to show progress. The 7,500,000 Osteopathic Progress fund entered its fourth year ith substantial lay gifts augmenting the money provided by nembers of the profession.

The research project in neurophysiology, begun in 1947 at ne Kirksville College of Osteopathy and Surgery, Kirksville, Io., was continued in 1949 and further aided by an additional rant from the U.S. public health service. The profession reatly expanded its research program in 1949.

The board of trustees approved for registration 164 osteoathic hospitals as meeting the standards and qualifications of ne association's bureau of hospitals and the American College f Osteopathic Surgeons. Of these, 60 were approved for inern training and 30 for graduate training in the specialties. here was a total of 8,089 beds available in osteopathic hositals in the United States in 1949.

The 53rd annual convention of the American Osteopathic ssociation was held in St. Louis, Mo., in July 1949. Dr. H. ale Pearson, Erie, Pa., succeeded Dr. Stephen M. Pugh, verett, Wash., as president, and Dr. R. C. McCaughan, Chiago, was re-elected executive secretary of the American Osteoathic association.

On Nov. 1, 1949, there were 11,297 practising osteopathic hysicians and surgeons in the U.S., 7,984 of them being memers of the association. (J. R. Fo.)

ttawa. The capital of Canada is at the confluence of the Rideau and the Ottawa rivers in Ontario. Pop. (1941) 54,951. At midnight Dec. 31, 1949, in its 11th annexation in o years, Ottawa took over parts of bordering townships of loucester and Nepean, increasing the area of the city proper y 22,125 ac. and making its total area 28,134 ac. The populaon automatically increased by 27,500, to bring the total to 91,442 (plus about 17,000 in outlying areas and the remaing townships).

National capital planning went forward. The Federal District ommission set up a special committee to deal with expropriaon prices. The city council purchased the Ottawa Light, Heat nd Power company, making the Ottawa hydro sole distributor f electricity; and started a $6,000,000 scheme to extend the ater service.

The federal government replaced its annual flat grant of 300,000 with a grant in lieu of taxes which was based on asessment values and would run from $500,000 to $600,000 nnually. The city still wanted the $1,500,000 it would get from gular taxation of federal property. Statistics for 1948 inuded: government and industrial pay rolls at an all-time peak f $100,000,000; average weekly wages $34.48 (1947: $31.69); ssessment $184,904,965 (1947: $177,811,033). (C. Cy.)

utdoor Advertising: *see* Advertising.
uter Mongolia: *see* Mongolian People's Republic.

Pacific Islands, British. These islands include the colony of Fiji (consisting of a number of islands), the British Solomon Islands protectorate, the Gilbert and Ellice Islands colony, the protected state of Tonga and Pitcairn Island; it would be incorrect to describe the New Hebrides, an Anglo-French condominium, as British, but they should be noticed here. (*See* also French Union.) Areas: Fiji 7,040 sq.mi.; Solomon Islands protectorate 12,400 sq.mi.; Gilbert and Ellice Islands 345 sq.mi.; Tonga 250 sq.mi.; Pitcairn 2 sq.mi.; New Hebrides 4,633 sq.mi. Populations (1948 est.): Fiji 270,000, including 125,674 Indians and 121,248 Fijians; Solomon Islands *c.* 95,000; Gilbert and Ellice Islands *c.* 36,000; Tonga 45,000; Pitcairn *c.* 140; New Hebrides *c.* 50,000. Governor and high commissioner, 1949: Sir Brian Freeston.

History.—The defenses of Fiji were reorganized in 1949. Its importance as a communication centre in the South Pacific made its security of special concern to New Zealand, and that government, therefore, lent an officer for the triple role of commandant of the Fiji military forces, liaison officer with the New Zealand chiefs of staff and defense adviser to the government of the colony. With his assistance, a Military Forces bill—to fix the establishments for new military units and the timetable for their creation and training—was framed and laid before the legislative council.

A committee of six members representative equally of the three (European, Fijian and Indian) communities, appointed in 1948 to consider constitutional reform in Fiji, reported unanimously in July advocating only small changes, though three members signed with reservations in respect to certain points and submitted minority reports. Their proposals recommended (1) an executive council consisting of the governor as president, four ex officio and three (one from each of the communities) unofficial members; these last to be members of the legislative council chosen by the governor from a panel of six, comprised of two members of each racial group; (2) a legislative council consisting of the governor as president, four ex officio, 12 official and 15 unofficial (comprising five Europeans elected by the European electorate, five Fijians elected by the council of chiefs and five Indians elected by the Indian electorate) members.

The quasi-nationalist political movement known as Marching Rule, which in the previous two to three years had to a large extent dominated native affairs in the British Solomons, was reported to have lost ground.

Finance and Trade.—Currency: in Fiji, the Fiji pound was valued in Nov. 1949 at $2.52 U.S.; in the Solomons, Gilbert and Ellice Islands and Tonga, United Kingdom and Australian currency are legal tender, though Tonga issues its own notes (Tonga pound=$2.24 U.S. Nov. 1949) and in all three territories the exchange standard system is based on Australian currency; in the New Hebrides, sterling and French currency are both legal tender. Revenue: Fiji (1949 est.) £F2,915,999; Solomon Islands (1948–49 est.) £A630,281, including grant in aid of £A361,368; Gilbert and Ellice Islands (1949–50 est.) £A479,290, including grant in aid of £A160,002; Tonga (1949–50 est.) £T302,000; New Hebrides (1947, condominium only) £83,209. Expenditure: Fiji (1949 est.) £F2,933,920; Solomon Islands (1948–49 est.) £A630,281; Gilbert and Ellice Islands (1949–50 est.) £A479,290; Tonga (1949–50 est.) £T323,243; New Hebrides (1947, condominium only) £49,220. Imports: Fiji (1948) £F5,944,834; Solomon Islands (April–Dec. 1948) £A320,655; Gilbert and Ellice Islands (1948) £A197,850; Tonga (1948) £T677,123; New Hebrides (1948) £400,512. Exports: Fiji (1948) £F7,789,512; Solomon Islands (April–Dec. 1948) £A154,000; Tonga (1948) £T850,000; New Hebrides (1948) £988,403. Principal exports: sugar and gold bullion (Fiji), phosphates (Ocean Island in the Gilbert and Ellice Islands) and copra. (Jo. A. Hn.)

Pacific Islands, French: *see* French Union.
Pacific Islands under Trusteeship: *see* Trust Territories.

Painting. The change of cultural and artistic atmosphere is often an imperceptible process and cannot be registered properly from year to year. Only the more obvious facts can be transcribed into an annual chronicle. Among these none was more evident during 1949 than the economic difficulties of the postwar period which led to the devaluation of most European currencies and which undoubtedly had a depressing influence on many artists throughout the world. There resulted from it a marked slowdown in the demand and the sale of works of art.

Yet the critical signs were not only of an economic nature. The cultural crisis of painting in a vacuum, allegedly concerned more and more with rarified problems of form and void of human significance, was discussed in magazine articles by some of the leaders of U.S. artistic life such as Lincoln Kirstein, Lester Longman and Francis Taylor. While these discussions were carried on, Rep. G. A. Dondero (Mich.) continued his public crusade against modern art, vigorously opposed by Alfred Barr, Jr., and Emily Genauer. Illustrated magazines such as *Life, View,* etc., contributed to bring contemporary painting in all of its aspects to the attention of millions of their readers. A number of round-table discussions held by *Life,* Columbia university and the California School of Fine Arts, San Francisco, Calif., showed a public concern with contemporary art expression in painting.

The international exchange of travelling exhibitions of old and modern masters increased. Especially important was the show of contemporary Italian art at the Museum of Modern Art, New York city. Works were contributed by 116 U.S. painters and collectors to the three museums of Israel. The sending of young artists abroad, and especially to France, under the Fulbright act was another feature of returning internationalism.

The great interest which French painting arouses in the United States became evident when the Georges Braque show was visited in New York city and Cleveland, O., by 175,000 people.

DONG KINGMAN'S "New York Bridge," winner of the $300 prize award of the American Watercolor society at its 1949 annual exhibition held in the galleries of the National Academy in New York city

ERIC ISENBURGER'S "Romantic Figure" which received the first W. A. Clark prize of $2,000 and the Corcoran gold medal at the 21st biennial exhibit of contemporary oil painting held in March 1949 at the Corcoran Gallery of Art, Washington, D.C.

In France a meaningful experiment in the field of liturgical art was in the process of completion: the building and decoration of the church of Assy, Haute-Savoie, to which some of the leading painters of France, such as Fernand Léger, Henri Matisse and Georges Rouault, had contributed paintings, mosaics and stained glass windows.

In Germany a return to the standards and ideals of pre-Hitlerian expressionism and abstraction was taking place with the younger generation guided by the influence of the older masters.

In the United States Anton Refregier finished his impressive cycle of wall paintings dealing with the history of life in early California in the Rincon Post Office annex in San Francisco. Rico Lebrun completed his vast "Crucifixion" series which was shortly to go on display at the Los Angeles County museum. Peter Blume brought to completion and displayed another of his absorbing compositions, "The Rock."

Painting applied to manufacturing processes found a new outlet in the artist decorated chinaware produced by Associated American Artists. New was the Hallmark Greeting Card competition for French and U.S. artists. Ventures by U.S. hotels and restaurants were successfully continued by the Hotel Sherman's Well of the Sea restaurant in Chicago, Ill., with ingenious paintings and lighting effects by Richard Koppe.

The first prize at the Carnegie institute's annual exhibit went in 1949 to Max Beckmann, who received an invitation to join the staff of the Brooklyn Museum Art school, Brooklyn, N.Y. The influence of this powerful artist, a newcomer to the United States, was already felt in the work of younger artists. Yet away from the main road of art Grandma Moses remained the favourite of the U.S. public. There existed a wide margin between the taste of the people and the main currents of contemporary painting. Clearly art indicated a deep-seated conflict in our civilization. Neither the artist nor the public could be blamed for it.

(*See* also ART EXHIBITIONS; ART SALES; MUSEUMS; SCULPTURE.)

FILMS OF 1949.—*Matisse* (Franco-American Audio-Visual Distribution); *Painting and Abstraction* (Encyclopædia Britannica Films Inc.); *What Is Modern Art?* (Princeton Film Center). (A. NR.)

Paints and Varnishes.

Paint sales in the United States for 1949 were estimated at about $1,000,000,000, which would represent a 10% to 11% decrease from 1948. Gallonage dropped to a lesser extent than price since there were reductions in the prices both of finished paints and of raw materials. Drying oil prices dropped substantially as a result of the government's lower support prices on agricultural products.

After many years of experimentation and exposure tests, several leading producers offered one-coat house paints, which contained high percentages of titanium dioxide pigment to supply the necessary opacity. Peeling of house paint resulting from condensation of moisture on the inner surface of siding was more prevalent because of new techniques in construction. Government and industrial programs were set up to educate builders and owners of homes on suitable wall vapour barriers and ventilation.

Water thinnable wall finishes continued in high favour. New semigloss wall finishes based on water dispersions of vinyl copolymers were recommended as fire resistant and as more resistant to washing and abrasion than the older water thinnable paints.

Grinding and dispersion of pigments through the use of fluid (pneumatic) energy was advanced to a large commercial scale after about 15 years of research and small-scale production. Coarse particles with or without the presence of a vehicle binder were dispersed by attrition in a rapidly moving stream of high pressure air or other vapour. Pigment dispersion by sonic and ultrasonic vibrations remained in an experimental state, but strong interest was shown by a large number of organizations.

Tall oil recovery by the leading paper producers developed, in competitive effort, purer, paler grades which were satisfactory for a wide range of architectural and industrial finishes. Safflower oil became a commercially important product, with about 10,000,000 lb. produced in the United States during 1949. Larger quantities of this rival to soya and linseed oils in colour-retentive paints were expected in 1950. Tung oil supply from China was curtailed because of the civil war in that country.

Allyl sucrose, an offshoot from the department of agriculture development on allyl starch, was recommended for improvement of drying oils.

Lead silicate was given more attention as part of the family of titanium, zinc oxide, leaded zinc, white lead and other pigments for exterior white paints. Barium potassium chromate became a rival of zinc chromate in rust-inhibiting primers.

Bentonite, a water-absorbing natural clay, was modified by alkylammonium substitution to produce a new finely divided, transparent flatting agent for furniture and architectural clear finishes.

Styrene copolymers, which were announced by several companies in 1948, were extended widely in use in 1949.

(Jo. C. W.)

Pakistan, Dominion of.

A self-governing member of the British Commonwealth of Nations. Total area (excluding Kashmir): *c.* 337,524 sq.mi., composed as shown in the table.

	Area (in sq. mi.)	Population (1941 census or est.)
Sind	48,136	4,535,000
West Punjab	62,100	15,800,000
North-West Frontier province:		
(a) Administered area	14,200	3,038,067
(b) Tribal area	24,986	2,500,000
Baluchistan	134,002	857,835
Western Pakistan	283,424	26,730,902
Eastern Pakistan	54,100	41,880,000
Total	337,524	68,610,902

As a result of the partition of the Indian subcontinent in Aug. 1947, by the end of 1948 nearly 6,599,000 Moslems entered Pakistan and about 5,563,000 non-Moslems migrated to India: the net increase in population resulting from this great migration was more than 1,000,000. The total population in 1948 was estimated at 73,321,000. Chief towns (pop., 1941 census): Karachi (cap., 359,492; 1948 est., *c.* 1,000,000); Lahore (671,659; 1948 est., *c.* 1,000,000); Dacca (213,218); Rawalpindi (181,169); Multan (142,768); Sialkot (138,348); Peshawar (130,967). Languages: mainly Urdu, Punjabi, Baluchi and Pashtu in western Pakistan and Bengali in eastern Pakistan, but English remained in use as a medium of instruction in higher education. Religion: mostly Moslem (72.9%), with Sikh, Hindu, Christian, Parsee and other minorities. Governor general, 1949: Khwaja Nazimuddin; prime minister: Liaquat Ali Khan.

History.—As in the preceding year, the chief problem in 1949 was that of the "cold war" with the dominion of India over Kashmir. It was announced, on the first day of the year, that the United Nations Conciliation commission had arranged a cease-fire, preparatory to a truce and to arrangements for holding a plebiscite. The commission proposed that the cease-fire arrangements should include: (1) the withdrawal of the tribesmen and other unauthorized Pakistan nationals; (2) the withdrawal of the Pakistani army; (3) the withdrawal of the bulk of the Indian army. After this, arrangements were to be made for ascertaining the will of the people by a free and impartial vote. The subsequent delays finally ended in a deadlock (*see* INDIA, DOMINION OF). The government of India assumed an intransigent attitude throughout the proceedings and insisted as a preliminary on the disbandment of the Azad Kashmir forces, which would leave the Moslem population at the mercy of the rival faction under Sheikh Abdullah.

One of the major difficulties created by the partition was over the canals. In western Pakistan, with its low rainfall, the water supply was a matter of life and death for millions. The Ravi, Beas and Sutlej rivers rise in Indian territory and lower down they join the Indus. West Punjab and Sind depend for their livelihood on the complicated system of canals derived from this source. At the time of the partition, it was assumed that the system would remain intact and that some machinery for their joint control would be set up. After the partition, however, India put in a claim for the absolute control of all waters passing through its territories. The matter was discussed at an interdominion conference held at New Delhi in August, but no agreement was arrived at. It was felt that, failing a solution, the matter should be referred to the U.N. Security council. (*See* also UNITED NATIONS.)

The relations of the provinces with the central government were not altogether satisfactory. Serious friction arose in the North-West Frontier Province, where the Pathans had never really been reconciled to Pakistani rule. The Durand line demarcated between India and Afghanistan in 1893 had left a kind of no man's land between the two countries, where order had been kept by the establishment of strong points connected by strategic roads from which expeditions could be sent to deal with parties of raiders seeking to enter Indian territory. The position had never been satisfactory and, after the withdrawal of the British garrison, the Afghan government had sought to win over the Pathan tribesmen by encouraging malcontents like the fakir of Ipi and exploiting local grievances (*see* also AFGHANISTAN). One of the last achievements of the former governor-general, Mohammed Ali Jinnah, had been to counteract these attempts to stir up trouble by taking active measures to alleviate the poverty which was at the root of the discontent.

The key to prosperity lay in co-operation between the two dominions. Their economics were complementary. Pakistan had certain raw materials, whereas India had coal, iron and manufacturing facilities; but the two had to be harnessed together in order to attract the foreign capital necessary for their development. The chief obstacle in the way of agreement was the deadlock over Kashmir.

Despite all handicaps, the economic outlook was hopeful. The State bank accomplished the difficult task of withdrawing Indian notes circulating in Pakistan and replacing them by its own currency, and partly received Pakistan's share of the assets of the Reserve Bank of India. In order to keep down the cost of living and maintain conditions favourable to the country's development, it was decided not to devalue the rupee. Pakistan's exports, mostly jute, cotton, hides, skins and wool, did not show any appreciable expansion.

On Nov. 25 the first Islamic international economic conference and commercial exhibition was opened at Karachi, and was the first attempt to unite the Moslem world on the basis of Islamic principles rather than political alliances. Among the countries participating were Afghanistan, Egypt, Iran, Iraq, Pakistan, Saudi Arabia and Turkey.

Of special significance was the movement to cultivate friendly relations with the U.S.S.R. The prime minister, Liaquat Ali Khan, was invited to Moscow, and Shoaib Quereshi, formerly foreign minister of Bhopal state, was appointed first ambassador of Pakistan to the U.S.S.R. (H. G. RN.)

Finance and Banking.—Budget: (1948–49 est.) balanced at Rs. 950,000,000; (1949–50 est.) balanced at Rs. 1,110,000,000; (1950–51 est.) balanced at Rs. 1,156,000,000. Note circulation (Aug. 1949) Rs. 1,644,000,000. Gold reserve (Aug. 1949): $13,300,000 U.S. Bank deposits (Aug. 1949): Rs. 2,568,000,000. Monetary unit: rupee with an exchange rate (Nov. 15, 1949) of Rs. 3.20=$1 U.S.

Foreign Trade.—Imports: (1948) Rs. 842,000,000, (1949, six months) Rs. 744,000,000. Exports: (1948) Rs. 867,000,000, (1949, six months) Rs. 579,000,000.

Transport and Communications.—Licensed motor vehicles (Dec. 1948): cars 14,130, commercial vehicles 8,276. Shipping (Dec. 1948): number of merchant vessels 19, total gross tonnage 87,703.

Agriculture and Fisheries.—Main crops (metric tons, 1948): rice, paddy, 11,621,000; wheat 3,317,000; barley 136,000; sugar, in terms of gur, 998,000; jute 994,000 (71% of the Indo-Pakistani subcontinent); cotton, ginned, 212,000; linseed 13,000; sesame 35,000; tea 20,000; tobacco (with India, 1947) 454,000. Livestock (1939 est.): cattle 24,444,000; sheep 5,941,000; pigs 73,000; horses 1,461,000; goats 7,982,000; camels 5,303,000. Production of wool (in metric tons on greasy basis, 1948–49) 11,000. Fisheries annual catch estimated at 33,000,000 lb.

Industry.—Factories (1944 est.) 1,261; persons employed 186,814. Fuel and power (1948): coal and lignite 241,000 metric tons; electricity 130,000,000 kw.hr.; crude oil 47,600 metric tons. Raw materials (metric tons, 1944 est.): salt 93,000; gypsum 25,000; chromite 21,000. Manufactured goods (1948): cotton cloth 86,000,000 metres; cement 325,000 metric tons.

Palaeontology.

Accomplishments in the study of fossil backboned animals in 1949 were highlighted by numerous contributions to the synthesis and unification of evolutionary thought. Of many excellent and fundamental papers of this nature, three were especially notable. One, a Princeton university volume entitled *Genetics, Paleontology, and Evolution,* comprised 23 essays by as many international leaders of biologic thinking, on such topics as geologic time, viewpoints on evolution, evolutionary rates and trends, speciation, adaptation and human evolution. A second, *The Factors of Evolution,* presenting the theory of stabilizing selection by I. I. Schmalhausen, was made available to a wider audience through translation from the original Russian by Isadore Dordick and editing by T. Dobzhansky. The third, G. G Simpson's *The Meaning of Evolution,* interpreted the long record of life on earth and analyzed its meaning in terms of man's ethics. Also of general interest and wide utility in the field was a new comparative anatomy text, *The Vertebrate Body,* by A. S. Romer.

Fishes.—The fossil sharks, and lobe- and ray-finned fishes of the upper Jurassic lithographic limestone of Cerín, Fr., were the subjects of an extensive monograph by Pierre de Saint-Seine. On the controversial matter of the morphogenetic relationships between lateral line sensory organs and developing centres of ossification in the lower vertebrate skull, F. R. Parrington made an interesting attempt to correlate the meagre subjective experimental data and the rather more extensive objective theory. Other papers of interest included a study of a pachycormid fish and review of that family's relationships by J. P. Lehman; a review of the basic anatomical, ecological and physiological traits of Middle Devonian fishes by J. Pieteau; a description of a tropical fauna from the Oligocene of Rumania by S. Jonet; reports on Pleistocene fishes from Java by F. P. Koumans and M. Boeseman; and the definition of a new family of early Tertiary teleosts by B. Schaeffer.

Amphibians.—Continuance of basic research for the better comprehension of prehistoric life were exemplified by F. Huene's summary of advances in the phyletic classification of early tetrapods. B. Schaeffer described some leptodactylid frogs from the early Tertiary of Patagonia with critical comments on concepts of anuran differentiation, dispersal and evolution.

Reptiles.—C. M. Bogart's continued research on thermoregulation in reptiles confirmed previously expressed convictions that these specific physiological functions must have played an important role in the evolution and biogeography of cold-blooded vertebrates. Knowledge of many fossil reptiles was increased by the acquisition and study of new materials. Among such contributions were: the description of the phytosaur *Paleorhinus* from the Triassic of Texas which permitted discussion of morphological characters indicative of both ontogenetic and phylogenetic growth (W. Langston); and description of new ichthysaurian specimens which prompted comment on the general relationships of these specialized marine saurians (F. Huene). New forms described included a number of mammal-like reptiles from South Africa (R. Brown); plesiosaurs from Venezuela (E. H. Colbert), Texas and South Dakota (S. P. Welles and J. D. Bump); and a Triassic pseudosuchian from Germany (W. Janensch).

Birds.—Hildegarde Howard reported discovery of four new Pliocene localities in California yielding fossil bird bones. Five new species of birds and two indeterminate ones derived from these sites increased to 16 the number of species in the Pliocene avifauna of California. Miss Howard also reviewed the geology and marine bird faunas of seven known Pleistocene occurrences in southern California, and collaborating with L. Miller presented a detailed study of the flightless Pliocene bird, *Mancalla.*

Mammals.—Among a number of papers by R. W. Wilson on fossil-gnawing mammals, an excellent resume was offered on the early Tertiary rodents of North America. K. Hescheler and E. Kuhn traced the succession of animal assemblages of Switzerland and their climatic environments from the Miocene through the Pleistocene. The evidences for microevolution during the Quaternary of certain elements of the faunas inhabiting southern and eastern Asia were discussed by D. A. Hooijer. A few of the other noteworthy studies in palaeomammalogy were a detailed taxonomic revision of the promerycochoerine oreodonts by C. B. Schultz and C. H. Falkenbach, the report of a new Pliocene fauna in Nevada by J. R. MacDonald and the quantitative analysis of a population of the peccary, *Platygonus,* rom a cave deposit in St. Louis, Mo., by G. G. Simpson.

Expanded co-operation in field work and research proved of nutual benefit to anthropologists, geologists and palaeontologists on the problems of human evolution. On these same roblems work on the South African ape-men, the Australoithecinae, again received the especial attention of numerous nvestigators (R. Broom, R. A. Dart, etc.). (D. H. D.)

Palaeobotany.—Near Brandon, Vt., an isolated occurrence f Tertiary lignite containing seeds and wood was being studied y Elso Barghoorn and colleagues at Harvard university to deermine the definite age of the deposit and the environmental onditions in the northeastern states at that time.

Fossil plants and animals contributed to the identification by Roland W. Brown and William T. Pecora of the U.S. geological urvey of hitherto unrecognized Eocene strata in the Bearpaw nountains near Havre, Mont. This discovery revealed that orth-central Montana was once covered with 5,000 ft. of rocks hat have since been eroded, leaving only a small remnant in he Bearpaw mountains.

The site of Cache valley, Utah, in Pliocene time was a lake asin in which sandy and limy sediments accumulated. Conained in the deposits are ostracodes, mollusks, insects and land lants. According to a report on the flora by Roland W. Brown, he latter include remains of juniper, willow, poplar, elm, ooseberry, serviceberry, indigo bush, sumac and maple. The onsistently small size of the leaves and fruits indicated adjustnent to semiarid conditions perhaps not greatly different from hose prevailing in or near the region in modern times.

The fossil species of *Metasequoia* were being studied by Ralph W. Chaney of the University of California, Berkeley, for monographic treatise on the history, distribution and nomenlature of the genus.

Henry P. Hansen of Oregon State college, Corvallis, found by ollen studies that lodgepole pine and spruce were dominant ree species in central and western Alberta in pre-late Wisconin time. Subsequently, during the postglacial warm, dry interal, grasses, chenopods and composites made their appearance ear Edmonton.

J. Harlan Johnson and Bernard J. Ferris of Colorado School f Mines, Golden, described Tertiary coralline algae from the Netherlands Indies.

Research in the palaeobotany of coal since 1943, with special eference to spores, was summarized with an extensive bibligraphy by James M. Schopf of the U.S. geological survey. C. Y. Hsieh described the Paikungshan coal field, discovered in 946 in the Huainan basin, northern Anhui, central China. Cores from this field revealed 27 seams of coal totalling a thickess of 127.95 ft. and indicating about 600,000,000 tons.

On April 4, 1949, the cornerstone of an Institute of Palaeootany, the first of its kind in the world, was laid with approriate ceremonies at Lucknow, India.

During the year the annual report on palaeobotanical reearch in the U.S. reappeared under the editorship of C. A. Arnold of the University of Michigan, Ann Arbor, after several ssues had been passed or delayed. From Stockholm, Swed., nder the editorship of Olaf Selling, came a 121-page report on he activities of European palaeobotanists between 1939 and 947.

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Palestine.

The former British-administered mandated territory of Palestine, with an area of 10,159 sq.mi., had been partitioned during 1949 between the new state of Israel, which held four-fifths of its area, and the Hashemite Kingdom of Jordan, which occupied the greater part of the remainder. In the southwest a small strip of territory around Gaza (about 100 sq.mi.) was in Egyptian hands, and in the northeast Syrian forces occupied some small frontier areas. No serious fighting took place after the conclusion of the final Israeli campaign in the Negev in Jan. 1949 (*see* ISRAEL).

The population of the area of Palestine which remained in Arab hands could not readily be established because of the influx of refugees from Israeli territory. That of the Gaza district was estimated at more than 200,000, while the much larger mountain area of Samaria and eastern Judaea, which was occupied by Arab legion forces from Jordan, was probably in excess of 600,000. The total number of Palestinian Arab refugees made destitute by the Arab-Israel war had been computed by the United Nations Economic Survey Mission for the Middle East at 652,000. During 1949 most of them received food and medical assistance from U.N. agencies or voluntary relief organizations.

The Old City of Jerusalem, Nablus and Hebron were the main Jordan-held centres of Arab Palestine, administered by local governors appointed by King Abdullah of Jordan, who had also strengthened his Amman government by the inclusion of some Palestinian Arab leaders. But there was no formal act of annexation or incorporation of the area into Jordan.

The United Nations still regarded Palestine as a unitary area for purposes of conciliation and economic development, and maintained a staff with permanent headquarters at the government house in Jerusalem, in an enclave between Jordan and Israel-held territory. By a resolution of the general assembly of Dec. 1949, the U.N. laid claim to the administration of Jerusalem and its environs. (*See* also EGYPT; JORDAN; UNITED

ISRAELI SOLDIERS (left) talking with Arab legionnaires freed in Jerusalem in Feb. 1949, under an Israel–Trans-Jordan agreement on the repatriation of able-bodied prisoners of war. It was the first exchange of combat troops since the start of the Arab-Jewish conflict

NATIONS.) (J. WR.)

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Panamá. A republic of Central America adjoining South America, Panamá is bisected by the Canal Zone, which is leased to the United States. Area: 28,575 sq.mi., pop. (off. est., July 1, 1949): 763,800, both exclusive of the Canal Zone. The national capital is Panamá city (146,117 in 1949); other principal cities are: Bocas del Toro (2,453), Chitré (5,676), Colón (54,334), David (13,656), La Palma (1,442), Las Tablas (2,667), Penonomé (2,031) and Santiago (6,944). Language: Spanish; religion: predominantly Roman Catholic. Presidents in 1949: Domingo Díaz Arosemena, Daniel Chanis, Jr., Roberto F. Chiari and Arnulfo Arias Madrid.

History.—The year 1949 was featured by a rapid succession of presidents and crises. The administration weathered one crisis when an alleged plot against the government was discovered in April and thwarted by a suspension of constitutional guarantees and the arrest of several political figures. Among those detained were the brothers Harmodio and Arnulfo Arias Madrid, both former presidents.

A heart ailment caused President Díaz Arosemena to retire in July, and he died Aug. 23. He was succeeded on July 28 by the first vice-president, Daniel Chanis, Jr.

President Chanis lifted the state of siege, released those arrested in connection with the plot and undertook to break the meat-packing and bus-transportation monopolies, allegedly controlled by national police personnel. The latter policy provoked a clash between Chanis and the chief of police, Col. José Remón, and on Nov, 20 Colonel Remón forced Chanis to resign in favour of the second vice-president, Roberto F. Chiari. Chanis, however, made a dramatic appearance before the national assembly and withdrew his resignation, explaining it had been signed under coercion. His reinstatement was upheld by the supreme court on Nov. 24, but he was ousted the same day by Colonel Remón, now the "strong man" of the country, and replaced by Arnulfo Arias Madrid. Chanis fled; Chiari retired; and Arias Madrid was sworn in as president on Nov. 25.

Arias Madrid referred the legality of his position to the national election jury. This body had denied him a majority in the presidential election of 1948 by invalidating a large number of his votes and proclaiming Díaz Arosemena elected. Now it reversed its decision and declared that Arias Madrid was legally elected and therefore the constitutional president. A general strike in protest of the coup ended Nov. 28, and the national assembly accepted Arias Madrid as president on Nov. 29.

A commercial aviation convention between Panamá and the United States, signed March 31, was ratified by the national assembly in April. The threat of a world-wide boycott of shipping under Panamá registry lingered throughout the year as the International Labour organization investigated working conditions on the country's flagships.

Education.—During the 1948–49 school year there were 922 primary schools with 3,175 teachers and 101,249 students; 15 secondary schools with 316 teachers and 7,155 students; 52 professional schools and colleges with 497 teachers and 9,149 students, and a national university with 76 professors and 1,343 students. Total appropriations allowed for public education in 1949 amounted to 7,710,549.43 balboas.

Finance.—The monetary unit is the balboa, maintained at par with the U.S. dollar. The national budget for 1949, approved Feb. 28, called for expenditures of 33,208,233.04 balboas, but as early as June 4 the collector anticipated a deficit of 2,000,000 balboas by year's end. The public debt as of Dec. 31, 1948, was $25,968,939 ($15,496,898 external and $10,472,041 internal). As of June 30, 1949, there were seven public and four private banks, capitalized at 4,850,000 balboas, with reserves of 2,106,661.35 balboas and deposits of 68,437,200 balboas. At the same date money in circulation amounted to 1,510,000 balboas in specie and 1,253,000 in paper.

Trade and Resources.—Exports during 1948 were estimated at $10,477,272 ($8,300,000 in 1947), and imports at $63,775,726 ($75,600,000 in 1947). During the first six months of 1949 exports were down 2% and imports were down 7%. The chief exports in 1948 were: bananas (5,658,906 stems, valued at $5,200,478), cacao beans (5,872,074 lb., a $2,089,661), coconuts (4,161,450 units, at $248,738), abacá fibr (7,101,486 lb., $1,444,815). In 1948 the chief agricultural crops were: rice (166,065,213 lb.), corn (102,911,570 lb.), beans (12,717,791 lb.), coffee (8,283,467 lb.), sugar (689,984.7 short tons) and potatoes (4,137,120 lb.).

Communications.—As of June 1949, there were 223.4 mi. of railroad. Highways at the end of 1948 measured 1,102 mi. paved, 450.9 mi gravel, and 275.8 mi. dirt. There were 25,173 motor vehicles registered in the republic at that date. Telephone and telegraph lines totalled 1,270 mi., and there were 50,000 radio receiving sets. The merchant marine had 654 ships with a total tonnage of 2,965,428.

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Panama Canal Zone. A United States military reservation embracing a ten-mile strip across the Isthmus of Panama, leased for the protection and administration of the Panama canal. Area: 553 sq.mi. including 191 sq.mi. of fresh water. Population, exclusive of military personnel (1948 off. est.): 47,077, of whom 22,402 were U.S. citizens. Administrative centre: Balboa Heights (pop., 1946: 12,623). Governor in 1949: Brig. Gen. Francis K. Newcomber.

History.—Discussions of canal modernization continued during 1949 without decision, and the study of proposed toll increases was postponed until 1950. On Sept. 21, 1949, commercial air operations were transferred from Albrook field to Panamá's new national airport.

A committee representing labour organizations, investigating conditions in Canal Zone employment, reported in February that racial discrimination existed in housing, schools, hospitals and wage rates. In September employment by the canal and Panama Railroad Co. was reportedly the lowest since 1940.

Education.—In 1948 there were 14 schools with 4,219 students and a junior college for whites; 14 schools with 2,973 and a normal school for coloured students.

Finance.—Total canal revenues for the 1947–48 fiscal year were $20,298,260.70; net expenses, $19,235,066.66; and net capital investment, $516,332,328.23. In the same period, 4,678 ships passing through the canal carried cargoes totalling 24,117,788 tons and paid tolls amounting to $19,956,593. The canal traffic was up 3.7% during the first nine months of 1949 from the same period of 1948.

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Pan-American Highway: *see* ROADS AND HIGHWAYS.

Pan American Union: *see* ORGANIZATION OF AMERICAN STATES.

Paper and Pulp Industry. The estimated production of paper and paperboard in the United States for 1949 was approximately 20,100,000 tons, or about 10% less than in 1948. Inventory backlogs and a resultant buying slump early in the year were the principal causes of the decrease. At the end of 1949 the industry was running at more than 99% of capacity, with production and prices firm.

Canada.—Canadian production of pulpwood in the 1948–49 season was estimated at about 9,400,000 cords. Production of wood pulp continued at the record set in 1947. No new mills were built in 1948 or 1949, but modernization of newsprint mills

Table I.—*U.S. Paper Production*

	1940	1945	1948
Newsprint	1,056,304	725,475	866,23
Book	1,655,423	1,501,015	2,284,24
Groundwood	550,453	636,026	836,57
Fine	735,753	1,000,794	1,156,70
Wrapping (coarse)	2,500,818	2,403,182	3,143,26
Tissue	733,894	157,083	230,32
Sanitary		823,705	963,36
Absorbent	129,410	88,643	108,61
Building papers	682,460	883,259	1,287,67
Other paper	60,120	238,047	317,858
Container board	3,434,834	4,131,107	5,041,895
Folding boxboard	1,416,452	2,092,344	2,153,313
Setup boxboard	898,549	721,087	597,374
Building boards	179,443	894,830	1,273,435
Other boards	449,796	1,074,368	1,787,889
Total	14,483,709	17,370,965	22,048,766

Table II.—*U.S. Production and Consumption of Paper, Wood Pulp and Pulpwood*

Year	Paper and Paperboard (short tons)		Wood Pulp (short tons)		Receipts of Pulpwood (cords)		
	Production	Consumption	Production	Consumption	Domestic	Imported	Total
925	9,182,204	10,590,090	3,962,217	5,590,304	5,005,445	1,088,376	6,093,821
931	9,381,840	11,403,850	4,409,344	6,005,718	5,896,446	826,320	6,722,766
935	10,506,195	12,490,886	4,925,669	6,877,869	6,590,942	1,037,332	7,628,274
940	14,483,709	16,620,632	8,959,559	9,781,739	12,307,138	1,435,820	13,742,958
945	17,370,965	19,665,487	10,167,200	10,825,412	15,315,000	1,699,000	17,014,000
947	21,101,833	24,748,602	11,945,864	13,285,435	17,714,229	2,000,000	19,714,229
948	22,062,445	26,257,445	12,872,292	14,331,505	18,939,458	2,250,000	21,189,458

esulted in an increase of 150,000 tons in 1948. The pulp and aper industry held first place in the Dominion in regard to ross value of products.

Table III.—*U.S. Wood Pulp Production*

(In short tons)

ear	Unbleached Sulphite	Bleached Sulphite	Total Sulphate	Ground-wood	Soda	All Others	Total
935	634,947	944,620	1,467,749	1,355,819	485,162	144,002	5,032,299
940	995,700	1,612,089	3,747,992	1,632,727	532,387	438,664	8,959,559
942	1,213,066	1,717,206	4,738,266	2,276,126	462,065	376,701	10,783,430
945	815,969	1,543,762	4,471,875	2,386,859	429,757	518,978	10,167,200
947	894,017	1,901,945	5,356,710	2,049,814	491,580	1,251,798	11,945,864
948	901,814	1,909,402	6,013,696	2,175,107	509,864	1,362,409	12,872,292

Table IV.—*Canadian Paper and Paperboard Production*

Kind	1945	1947	1948
ewsprint	3,324,033	4,474,000	4,640,000
ook and fine paper	162,198	212,000	231,000
rapping	162,175	188,000	207,000
aperboard	541,000	655,000	708,000
issue	51,000	68,000	69,000
ther papers	66,000	178,000	208,000
Total (short tons)	4,306,406	5,775,000	6,063,000

Table V.—*Canadian Wood Pulp Production*

(short tons)

Year	Bleached Sulphite	Unbleached Sulphite	Sulphate	All Others	Groundwood	Total*
935	374,157	644,820	236,536	20,887	2,563,711	3,868,341
940	543,987	936,558	371,569	133,164	3,305,484	5,290,762
945	603,929	1,035,755	478,740	140,470	3,341,920	5,600,814
947	704,749	1,332,783	689,435	261,435	4,275,269	7,253,671
948	735,346	1,404,060	816,438	77,907	4,392,680	7,426,431

*Includes all pulp screenings.

United Kingdom.—No late statistics regarding paper manuacture in the U.K. were issued in 1949. A strict rationing polcy was still being maintained, although newspapers were pernitted to expand size and circulation, the latter without retriction. The fuel situation improved considerably during the ear. Imports of pulp and paper were limited by the dollar xchange and devaluation of the pound.

(*See* also Forests.)

Films of 1949.—*Paper Forests* (Flory Films, Inc.) (R. G. M.)

aprika: *see* Spices.

apua: *see* British Empire.

araguay. A landlocked republic in south-central South America, Paraguay is bounded north and east by razil, south by Argentina and west by Bolivia. Area: 157,047 q.mi., of which 95,338 sq.mi. constitute the sparsely populated haco, while the 61,709 sq.mi. lying east of the Paraguay river ontain 95% of the population and activity. Population (mid-948): 1,270,000. The people are a homogeneous mixture of panish and Guaraní stock, with some Portuguese and Italian, hich has developed into a racial type. Official language: Spansh. The Guaraní tongue has survived more than the blood, but s secondary and recessive. Capital and chief centre: Asunción; op. (1948): 130,067. Other cities: Villarica (31,081); Conepción (16,487); Encarnación (16,078). The official religion s Roman Catholic, and the archbishop is at times president of he council of state. At the end of 1949 the president was ederico Chaves; premier, Bernardo Ocampos.

History.—On Jan. 30, 1949, an army faction headed by Gen. aimundo Rolón, with leanings toward Franquismo (liberal ocialism), forced the resignation of Pres. Natalicio González, of the Guión (battle standard) branch of the Colorado party. As provisional president, General Rolón proclaimed that political exiles of all opinions might freely return to Paraguay and participate in the new presidential elections which he set for April. Faced with this situation, Guión and Democratico factions of the Colorados pooled their influence with the various army officers. They thus succeeded in taking over the government from General Rolón on Feb. 26, during the funeral ceremonies of the archbishop; and installed as provisional president Felipe Molas López, of the Guión faction. Molas was made the sole candidate in the April elections, as the Liberal and the Franquista (Febrerista) exiles did not return. He assumed office formally on April 17, with ostensible support from both Colorado factions; but during the summer the ascendancy of the Democratico faction became sufficiently pronounced so that it induced the Colorado governing board to direct Molas to resign. On Sept. 11 Federico Chaves was made president, ruling the country on behalf of the governing board (which also dominated the chamber). On Nov. 10 President Chaves, a veteran Colorado leader who had borne the brunt of his party's labours during its long years in opposition, issued a decree calling for another election in July 1950; but no indication was given as to whether the Liberales and Febreristas would be involved.

Education.—The last official estimates (1946) show 2,000 elementary schools, of which a large share give three years instruction, with 65,000 pupils. Several national normal schools and a national junior college were maintained in 1949; and at least six agricultural secondary schools. The National university at Asunción had 1,200 students.

Finance.—As a member of the International Monetary fund, Paraguay fixed the value of its currency unit, the guarani, at 3.09 to the U.S. dollar. Free exchange transactions, some legal, show that its value if uncontrolled was somewhat lower in 1949. The government revenues in 1948 were $15,000,000; and the expenditures, $24,000,000. The national debt increased to $22,500,000, the bonds being held mainly in the governmental Bank of Paraguay. Money in circulation rose by 70% in 1948 to $15,500,000. Reserves of gold and foreign exchange at the end of 1948 were $8,500,000. The Bank of Paraguay serves as a central and fiscal bank and also operates a commercial department which does 80% of the ordinary bank transactions of the country. Its net earnings in 1948 were $1,350,000. The three foreign banks—the London and South America, the Bank of Brazil and the Bank of the Argentine Nation—had aggregate net earnings of $250,000 in 1947. Total bank loans were $24,000,000 at the end of 1948, and deposits subject to check were $16,500,000.

Trade and Communication.—A normal figure for Paraguayan exports is $25,000,000; and the statistics for the first six months of 1948 indicated that the trade decline of 1947 had passed. In 1948 the U.S. took over from Argentina the position as the leading customer of Paraguay for exports and the leading source for imports, while Britain also improved its sales in Paraguay at the expense of Argentina and Brazil.

Water transport on the Paraná and Paraguay rivers handled 440,000 tons in 1948, while rail transport handled 240,000 tons. The Argentine Dodero services were greatly predominant until 1947 and 1948, when Paraguay's national merchant fleet placed several modern steamers in operation. The Brazilian Bacia do Prata line also maintained regular service. A standard-gauge railway, British-Argentine, runs 278 mi. southeast from Asunción through the best farm and forest areas, and one weekly connects by car ferries at Encarnación-Posadas with a through train to Buenos Aires. Highway construction in 1949 brought the mileage of modern roads almost to 600, although four-fifths of these were gravel-crowned. Earth roads totalled 4,000 mi. Interurban bus services are widespread. At the end of 1948 the number of motor vehicles was 2,900, of which 300 were buses, 1,400 passenger cars and 1,100 trucks. There were air line connections with Argentina and to Rio de Janeiro. Internal aviation services were under army supervision and were considerable. The telephone system, operated by the government, had 35 exchanges in 1948 and served 4,000 subscribers. The network of 137 telegraph stations is state-owned. There were six long-wave and three short-wave radio stations in 1948, and more than 25,000 receiving sets.

Agriculture.—The total agricultural revenue in 1946 was estimated at $28,000,000, not including animal products of $21,000,000. The 1948 production of 22,000 tons of cotton was only one-half that of 1947. The 1948 tobacco output was 13,000 tons, but prices were sluggish. Vegetable oils—cottonseed, coco, peanut, tung and castor—totalled 7,000 tons. The staple food mandioca was in short supply, but a bumper 110,000-ton yam crop eased the situation. Sugar cane fell to 310,000 tons in 1948, more than one-half used for feed, and sugar, to 12,500 tons. The rice yield, which is increasing, was more than 30,000 tons in the 1948–49 season. Citrus sales from farms were 125,000 boxes, with grapefruit predominating over oranges and lemons. Yerba maté shipments in the first half of 1948 were 4,500 tons; petitgrain (perfume), in 1948, 165 tons. Cattle slaughtered in 1948 were 425,000, of which 60,000 came from Argentina.

The herds had declined since 1945 when the census showed 3,260,000 head. In 1945 there were 306,000 horses, 255,000 sheep and 357,000 hogs.

Manufactures.—The 1946 estimate for the value of manufactures was $44,000,000, but this included both quebracho and canned meat, semi-manufactured forest and food products. The true manufacturing enterprises are small. The government in 1948 aided in installing new machinery for producing wood products, vegetable oils and sugar.

Mines and Forests.—No minerals were exploited in Paraguay in 1949. The minerals resources are extremely meagre—limestone and clay. The Union Oil Co. of California, which has conducted extensive exploration since 1944, turned in its concession at the end of 1949 and desisted from efforts to find petroleum. Exports of hardwood lumber during the first half of 1948 amounted to $3,000,000. Quebracho production in 1948 was 48,000 tons, but only three-fourths of this was exported as prices and demand in the United States were low.

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(W. Ft.)

Parents and Teachers, National Congress of.

In April 1949 the National Congress of Parents and Teachers (the P.T.A.) had a total membership of 5,774,358 parents, teachers and other interested persons, organized into 32,942 local parent-teacher associations, which functioned in each of the 48 states, the District of Columbia and Hawaii.

During the year, a joint committee of the National Education association and the National Congress of Parents and Teachers issued a factual report, "Our Schools and the Next Decade," which demonstrated the critical need not only for more school buildings throughout the country but for more teachers, higher salaries for the teachers and for teachers with better training. Vigorous support was given to a broad legislation program, with stress on federal aid to publicly controlled, tax-supported schools. The bill to extend local public health services, which was initiated by the congress in 1948, was reintroduced into the senate and the house. Other legislation sponsored by the National congress in 1949 included measures for: (1) appropriations to carry out the school lunch program as provided in public law 396; (2) the support of the United Nations and its component parts as the best basis for international co-operation; (3) the use of federal funds to demonstrate public library service to people who were without it or were inadequately served; (4) juvenile protection (the expenditure of children's bureau child welfare services funds for returning to their home runaway children not over 15 yr. of age who have crossed state boundaries).

In thousands of communities parent-teacher associations conducted the annual Summer Round-Up of the Children, a project begun by the National congress in 1925 to encourage medical checkup of children entering school for the first time. The scope of the action committee on comics, radio and motion pictures was extended to include television.

National congress publications for 1949 included the official monthly magazine, *National Parent-Teacher;* the *National Congress Bulletin; Proceedings* of the annual convention; and a social history of the parent-teacher movement, *Where Children Come First: A Study of the P.T.A. Idea,* by Harry and Bonaro Overstreet.

The office of the National Congress of Parents and Teachers is located at 600 S. Michigan Ave., Chicago 5, Ill. (A. H. Ha.)

Paris.

Capital and largest city of France, Paris had a population in 1946 of 2,725,374. President of the municipal council, 1949: Pierre de Gaulle.

In general, throughout 1949 there was a gradual return to normal peacetime conditions. Food, though usually expensive, was good and plentiful; and rationing (except for coffee) was abolished, although many price controls were retained. A certain amount of dissatisfaction with prevailing conditions manifested itself in a series of strikes, which were, however, of short duration. There was unrest in the civil service, in some transport services and in the nationalized Renault works. On May 7 the government issued requisition orders for staffs of Air France who had struck because of inadequate pensions and were demanding charters for flying staffs. On Nov. 25, the *Métro* and buses ceased running as part of the 24-hr. general strike occasioned by the government's refusal to extend the special wage bonus, granted earlier in the year, to all workers instead of merely to those in the lowest-paid categories.

A welcome event during 1949 was the reopening of three museums in the Palais de Chaillot which had previously been occupied by the United Nations general assembly. These were the Musée de l'Homme, Musée de la Marine and Musée des Monuments Français. The Musée de Cluny was also reopened.

In October, the new territorial brigades of police were introduced in an effort to counter increasing brigandage in Paris and its suburbs.

The city's estimated expenditure for 1949 was 53,760,517,084 fr. and estimated revenue was 53,760,517,422 fr.

Parks and Monuments: *see* NATIONAL PARKS AND MONUMENTS.

Parliament, Houses of.

For the first time since 1939 both houses sat on a Saturday when on July 30, 1949, they assembled to conclude outstanding business before the summer adjournment. The ten-week recess was interrupted on Sept. 28 when both houses reassembled to debate the government's policy of devaluing the pound sterling. The house of commons sat for three days, and the lords for two days. The session, which had been opened by the king on Oct. 26, 1948, continued until Dec. 16, 1949. This long session was held in order to pass the Parliament bill and the Iron and Steel bill before parliament was dissolved.

The latest constitutional date for the dissolution of parliament was Aug. 1950, but in the autumn of 1949 it was widely believed that the government favoured an immediate general election, and on Oct. 13 the following statement was issued from 10 Downing street: "Having regard to the disturbing effects on trade and industry and on the national effort by the continuance of speculations as to an early General Election, the Prime Minister thinks it right to inform the country of his decision not to advise His Majesty to dissolve Parliament this year."

The strength of the Labour party in the house of commons was reduced by three during the year. On May 18, K. Zilliacus (Gateshead) and L. J. Solley (Thurrock, Essex) were expelled from the Labour party, and L. Hutchinson (Manchester, Rusholme) was expelled on July 27. With D. N. Pritt (Hammersmith, north) and J. Platts-Mills (Finsbury) they formed an independent labour group under the chairmanship of D. N. Pritt. Alfred Edwards (Middlesbrough) and Ivor Thomas (Keighley, Yorkshire), both of whom had been elected as Labour members but later sat as independents, received the Conservative whip during the year.

On Jan. 27, for the first time since 1938, a ballot was held for private members' bills; 353 members entered for the ballot; 25 names were drawn; and the bills were formally introduced on Jan. 28. Among those which were rejected at the second or third readings in the house of commons were the Protection of Animals (Hunting and Coursing Prohibition), Spelling Reform, Analgesia in Childbirth, and Hairdressers (Registration). The first private members' bill to receive the royal assent was the Slaughter of Animals (Scotland), which received the assent on July 30.

The clerk of the parliaments from 1934, Sir Henry Badeley, retired on May 30 and was succeeded by Robert Overbury no had been clerk assistant of the parliaments from 1937. In e birthday honours list Sir Henry was created a baron; and he ok the title of Lord Badeley, of Badeley, Suffolk. Admiral Sir eoffrey Blake, Gentleman Usher of the Black Rod from 1945, signed in January because of continuing deafness from gunast; the king appointed Lieut. Gen. Sir Brian Horrocks to cceed him.

Other new peers created in 1949 were: Lord Adams (J. J. lams), Lord Dugan of Victoria (Sir Winston Dugan), Lord oyd-Orr (Sir John Boyd Orr), Lord Macdonald of Gwaenysgor ir Gordon Macdonald) and Lord Archibald (George Archild). (*See* also CABINET MEMBERS; GOVERNMENT DEPARTENTS AND BUREAUS.)

arliament of Europe: *see* EUROPEAN UNION.

atents. The United States patent office, an agency of the department of commerce, created in 1802 and arged with the execution and administration of the patent and ade-mark laws, granted during the calendar year 1949, 39,809 tents, which included 4,451 for designs, 93 for plants and 118 issues. This was an increase of 11,713 over the 28,096 total r 1948.

Applications for patents filed in the patent office for the lendar year 1948 totalled 75,952; for the first 11 months of 49, the number filed was 68,133. In Dec. 1949, approximately 0,000 applications were pending in the patent office, of which out 141,000 were awaiting action by the office and 96,000 der rejection were awaiting response by applicants, the reainder being in interference or on appeal.

Trade-marks registered (15,972) and renewed (3,797) during 49 totalled 19,769. This compared with 16,530 registrations d renewals in 1948. In addition, 12,983 registrations were published. Applications for registration, republication and newal for the first 11 months of 1949 totalled 23,419, compred with 37,159 applications for the entire preceding year. pproximately 41,000 trade-mark applications were pending in e office in Dec. 1949, of which about 13,000 awaited response applicants.

At the end of 1949, the patent office had granted more than 492,000 patents, of which about 600,000 were unexpired. More an 40,000 unexpired patents were listed on the register of tents available for licence or sale—the new listings being pubhed in the weekly issues of the *Official Gazette*. Printed pies of patents may be purchased for 25 cents each; tradearks and designs, for 10 cents each. During the year ended ne 30, 1949, more than 6,300,000 copies of United States tents and trade-marks were distributed, of which more than 0,000 were sent to libraries in the United States, and approxately 1,000,000 to foreign countries under exchange agreeents.

The work of revising the patent rules of practice, initially dertaken in 1946, was concluded, and a comprehensive revin, published as *Rules of Practice of the United States Patent fice in Patent Cases*, became effective March 1, 1949. Publiion in Nov. 1949 of the *Manual of Patent Examining Produre* brought to completion the project initiated in July 1948 develop an official reference work on the practice and produre in the office as it relates to the duties and operations of aminers. The office prepared and issued during 1949 a new blication entitled *Guide for Patent Draftsmen,* and a pamlet listing attorneys and agents registered to practice before e patent office as of Jan. 1, 1949, was printed.

Publication, at the request of the applicant or owner, of abacts of abandoned patent applications was begun in the July 1949, issue of the *Official Gazette,* in accordance with a commissioner's notice dated Jan. 25, 1949. These abstracts, 295 of which were published in 1949, may be used as references against pending applications and were made available in the public search room and the examiners' files.

The project undertaken in 1948 to perfect the patent copy reference collection maintained for public use in the search room continued during the year. Approximately 200 patent classes comprising more than 56,000 bundles of copies were checked for mutilated, misplaced and missing copies, and necessary corrections were made. This work was to continue until the entire collection of nearly 100,000 bundles had been examined.

Net receipts for the fiscal year ending June 30, 1949, were $5,161,803.96. Obligations incurred under all patent office appropriations amounted to $10,101,937.71, compared with $8,603,032.22 for the preceding year. (J. A. ML.)

Pauker, Ana (1893–), Rumanian politician, was born on Dec. 31 at Codaești, Moldavia, the daughter of Zvi Rabinsohn, a *shohet* or Jewish slaughterer. She studied medicine at Bucharest university and later in Zurich where she married Marcel Pauker and converted him to Marxism. By 1922 she was a member of the central committee of the Rumanian Communist party. When, on July 28, 1924, the party was declared illegal by an act of the Rumanian parliament, she left the country. A few years later she was again active in Rumania. In 1933 she was sentenced to imprisonment for organizing a strike in Grivitsa railway workshops, but escaped. When she returned to Moscow with her husband, he was executed for his Trotskyist sympathies. She, however, held to the Stalinist "general line," and by 1935 was again in Rumania. Rearrested, she was sentenced to ten years' imprisonment for conspiracy, but in 1941, after the annexation of Bessarabia, the soviet government secured her liberation. She went to Moscow, joined the executive committee of the Comintern and became the Kremlin adviser on Rumanian affairs. She returned to Rumania in Aug. 1944 with the soviet army. In Sept. 1947 she represented the Rumanian Communist party at the meeting at Wilcza Góra in Polish Silesia, where the Cominform was created. On Nov. 7, 1947, she was appointed foreign minister. In Dec. 1947 she was instrumental in forcing King Michael to abdicate and in proclaiming Rumania a People's Republic. On Feb. 4, 1948, she revisited Moscow, where she attended the signature of a 20-year treaty of friendship, co-operation and mutual assistance with the U.S.S.R.. On April 15, 1949, she was appointed one of the three Communist deputy prime ministers.

Peaches: *see* FRUIT.

Peanuts. The U.S. in 1949 harvested only 1,853,140,000 lb. of picked and threshed peanuts, the smallest crop in eight years, compared with a record 1948 crop of 2,338,470,000 lb., and an average for the previous decade of 1,845,718,000 lb. Largely as a result of a request by the government for a 22% reduction in acreage, acreage harvested in 1949 was only 2,433,000 (the government goal was 2,629,000 ac.) a sharp reduction from the 3,311,000 ac. of 1948 and the 1938–47 average of 2,718,000 ac. Average yields of 762 lb. per acre were high compared with 706 in 1948 and an average for the 1938–47 decade of 692.

The season average price of 1949 crop peanuts to farmers was estimated at 10.4 cents per pound, approximating the government support price and comparable with 10.5 cents per pound in 1948. The crop was valued at $191,801,000 as compared with a 1948 crop valued at $246,495,000. The support program for peanuts by the government covered about 70% of the crop dur-

U.S. Peanut Production by Leading States

(In thousands of bushels)

State	1949	1948	Average 1938–47
Georgia	605,900	818,300	629,877
Texas	343,785	300,800	265,706
Alabama	289,075	354,710	281,976
North Carolina	236,000	346,625	305,596
Virginia	187,650	237,800	176,183
Oklahoma	100,800	153,000	75,851
Florida	54,250	85,250	60,450
South Carolina	14,300	18,200	17,332

ing 1948–49. Under existing legislation, price support would continue at 90% of parity for the 1950 crop if either marketing quotas or acreage allotments were in effect; it was indicated that both would be continued. Per capita consumption of shelled peanuts in the U.S., meanwhile, declined to 4.4 lb. from a peak of 6.4 lb. in 1945, but approximated the prewar average.

World production of peanuts in 1949 was estimated at 11,460,000 short tons, unshelled, by the U.S. department of agriculture, an increase over the 11,000,000 tons of 1948 and 20% more than the prewar (1935–39) average crop of 9,550,000 tons. The largest producer, India, with a crop of 4,200,000 tons, in contrast with a poor 1948 crop of 3,442,000 tons, accounted for much of the increase. China, Indonesia, French West Africa and Gambia also showed increases, whereas the U.S., Nigeria and Brazil had smaller crops. The Overseas Food corporation of the British government, responsible for the partially developed East African peanuts project, reported very slow progress and unexpectedly high costs. (J. K. R.)

Pears: *see* FRUIT.
Pecans: *see* NUTS.
Pemba: *see* BRITISH EAST AFRICA.
Penicillin: *see* CHEMOTHERAPY; MEDICINE.

Pennsylvania.

A middle Atlantic state and one of the original 13 states of the union, Pennsylvania is popularly known as the "Keystone state." Area, 45,333 sq.mi., including 288 sq.mi. of inland water; population (1940): 9,900,180, of whom 8,453,729 were native-born white, 973,260 foreign-born white and 470,172 Negroes. The urban population in 1940 numbered 6,586,877 and the rural 3,313,303. Capital: Harrisburg (83,893). Cities with a larger population: Philadelphia (1,931,334); Pittsburgh (671,659); Scranton (140,404); Erie (116,955); Reading (110,568); Allentown (96,904); Wilkes-Barre (86,236). The United States census estimate of total population, July 1, 1949, was 10,618,000.

History.—The year 1949 witnessed notable progress in carrying forward a widespread program for the development of the resources and facilities of the commonwealth. The biennial session of the general assembly created various agencies to implement the state's program of public improvement and school and hospital construction. These included a general state authority, a highway and bridge authority and a general school authority. A housing assistance law was enacted under which no discrimination was permitted in state-aided housing on grounds of race or religion.

On Oct. 24 ground was broken for the western extension of the Pennsylvania turnpike to the Ohio border. Construction was well under way on the eastern extension to Philadelphia.

During 1949 state dredges removed 5,900,000 cu.yd. of accumulated silt from the bed of the Schuylkill river. The state's nurseries distributed 18,000,000 trees for reforestation and erosion control.

An outstanding step taken in the development of a public recreation program was the inauguration of a state summer recreational camp for underprivileged children.

A notable climax to the annual Pennsylvania week celebration in October was a ceremony in the village of Aaronsburg commemorating the 150th anniversary of the founding of the Salem Lutheran church, which was erected as a monument to religious and racial tolerance on land donated by Aaron Levy, a Dutch Jew.

In the Nov. 1949 election, William E. Hirt, Republican, received 1,765,041 votes for judge of the superior court against 1,734,909 for Harry E. Montgomery, Democrat. A constitutional amendment was adopted authorizing a bond issue to pay a bonus to veterans of World War II.

The state's principal officers in 1949 included: James H. Duff, governor; Daniel B. Strickler, lieutenant governor; T. McKeen Chidsey, attorney general; William S. Livengood, Jr., secretary of internal affairs; Weldon B. Heyburn, auditor-general; Charles R. Barber, treasurer; Francis B. Haas, superintendent of public instruction; and George W. Maxey, chief justice.

Education.—Statistics for 1947–48, the latest year for which complete figures were available in 1949, showed a net enrolment of 1,523,267 pupils in the public schools, including 55,070 in the kindergarten, 907,100 in the elementary division and 561,097 in the secondary schools. Similarly, there were 797 kindergarten teachers, 29,819 elementary teachers, 23,713 giving instruction in high schools, 1,433 elementary principals, 854 secondary principals, 1,874 supervising officials and 1,254 other professional employees. The total expenditure, including current expenses, capital outlay and debt service, was $282,345,301, of which $239,644,165 was for current expenses. School districts supplied 60.5% of their receipts from local taxation, while the state government contributed 38.4% and the federal government 1.1% for current operating expenses.

Social Insurance and Assistance, Public Welfare and Related Programs.—During 1949, expenditures by the department of public assistance totalled $145,000,000, including $96,000,000 state funds and $49,000,000 federal funds. The assistance rolls contained an average of 89,000 old-age assistance cases, 47,000 cases receiving aid to dependent children, 37,000 general assistance cases and 15,000 blind pensioners.

The state maintains eight penal and correctional institutions for the support of which a biennial appropriation of $14,773,000 was made for 1949–51. In addition, it owns and operates 10 medical and surgical hospitals, which received an appropriation of $8,780,000; 4 institutions for the feeble-minded and epileptic, $11,240,000; and 17 mental hospitals, $57,077,000. The state contributed $14,865,600 for the aid of privately operated hospitals and homes.

Communications.—Of the approximately 100,000 mi. of highways in Pennsylvania in 1948, 40,900 mi. were on the state highway system under the supervision of the department of highways. Included in this state highway total were 675 mi. in the cities of Pennsylvania and 2,179 mi. in the boroughs. As of Dec. 31, 1949, 37,900 mi. were of improved type, leaving 3,000 mi. unimproved. In addition, there were 160 mi. of superhighway operated by the Pennsylvania Turnpike commission.

Banking and Finance.—On June 30, 1949, there were 356 state banks, including 8 savings banks, with assets of $4,942,619,450.12. These state banks had total deposits of $4,432,880,950.19.

In addition, as of Dec. 31, 1948, there were 786 building and loan associations with assets of $490,863,164.

On June 30, 1949, there were 633 national banks located in Pennsylvania, with assets of $7,064,509,000. The deposits of these national banks totalled $6,309,721,000.

Appropriations and allocations from the general fund and motor licence fund for the biennium ending May 31, 1951, were $1,012,665,225. The estimated receipts from these two funds were $935,419,900. The gross

Table I.—*Leading Crops of Pennsylvania*

Crop	Production 1949	Production 1948	Average 1938–46
Corn, bu.	64,077,000	65,379,000	$54,239,000
All wheat, bu.	21,114,000	18,354,000	18,461,000
Oats, bu.	24,630,000	29,146,000	25,294,000
Barley, bu.	5,400,000	3,933,000	3,568,000
Rye, bu.	202,000	232,000	668,000
Buckwheat, bu.	1,886,000	2,332,000	2,250,000
Potatoes, bu. (white)	19,158,000	19,425,000	19,275,000
Tobacco, lb.	57,190,000	61,275,000	48,934,000
All hay, tons	3,392,000	3,430,000	3,470,000
Apples, bu.	9,680,000	4,520,000	7,598,000
Peaches, bu.	2,451,000	2,182,000	1,920,000
Pears, bu.	385,000	255,000	379,000
Cherries, tons	10,700	7,400	7,04
Grapes, tons	14,100	17,200	15,96

Table II.—*Principal Industries of Pennsylvania*

Industry	Value of Products 1948	Value of Products 1940
Metals	$8,147,895,500	$2,944,848,400
Textiles	2,175,661,500	795,457,200
Food	2,185,950,700	740,801,600
Chemicals	1,548,450,600	518,062,300
Paper and printing	951,790,300	372,074,400
Leather	484,073,500	174,963,900
Tobacco products	161,303,400	92,272,300
Lumber and its remanufacture	258,093,600	79,733,100

Table III.—*Principal Mineral Products of Pennsylvania*

Mineral	Value 1946	1940
ituminous coal	$454,926,000	$237,333,374
nthracite	413,417,070	205,490,000
ig iron	329,194,957	282,666,561
etroleum	49,470,000	39,700,000
atural gas	45,050,000	41,733,000
ement	48,294,891	38,350,998
one	25,872,596	19,855,478

ebt Oct. 31, 1949, was $118,188,000, which cash and securities in the inking fund reduced to a net of $78,768,989.

Agriculture.—The total gross farm income for 1948 was $829,329,000, ncluding $824,011,000 in cash receipts from farm marketings and 5,318,000 in federal government payments.

Manufacturing.—In 1948 there were 20,021 manufacturing establishments in the state, employing 1,808,817 persons to whom $5,206,894,800 vas paid in wages and salaries. The capital invested was $5,560,016,900 nd the value of the goods produced was $18,587,676,900. Included as art of the latter amount, value added by manufacture was $7,565,-34,400. The value of the product of the principal industries for 1940 nd 1948 is shown in Table II.

Mineral Production.—The value of the principal mineral products of the tate in 1940 and 1946 is shown in Table III. (J. H. Df.)

Pension, Old-Age: *see* Relief; Social Security. *See* also nder various states.

Pensions, Army and Navy: *see* Veterans' Administration (U.S.).

Pepper: *see* Spices.

Performing Right Societies: *see* Societies and Associations: *American Society of Composers, Authors and Publishers.*

Perón, Juan Domingo (1895–), president of Argentina, was born on Oct. 11 ear Lobos, south of Buenos Aires, and was educated in military chools. He became one of the leaders of the G.O.U. (Grupo de Oficiales Unidos), a nationalist clique of young army officers, which in 1943 helped overthrow the regime of Pres. Ramón S. Castillo. Perón became war minister and later vice-president under Pres. Edelmiro Farrell, and in 1946 was himself elected president on the Labour party ticket.

In 1948 Peronistas won sufficient strength in the congressional elections to sponsor a constitutional convention to initiate n amendment to permit the immediate re-election of the president. The new constitution, effective March 16, 1949, also provided for direct instead of electoral-college election of the president, vice-president and senate; continued dissolution of landed estates and automatic citizenship for foreigners five years in esidence, unless they declined it. Though Perón continually nsisted he did not intend to run for re-election, his followers enominated him at their party convention in Buenos Aires in uly 1949.

In Feb. 1949 and again in September, Perón halted imports or a period, presumably to avoid an unfavourable balance of rade. He told the Argentine congress in May that all public ervices still in private hands must be nationalized. In August, e effected a five-year trade agreement with Britain, and other greements with Norway and France. In October, the Argentine ongress passed a law forbidding members of existing political arties from changing political registration before 1952, thus reventing the formation of an anti-Perón coalition. In September a bill was passed making it a prison offense in Argentina to how "disrespect" to government leaders.

Persia: *see* Iran.

Peru. A South American west coast republic, Peru is bounded on the north by Ecuador and Colombia, on the east by Brazil and Bolivia, on the south by Chile and on the west by he Pacific ocean. Area: 482,258 sq.mi.; pop. (1948 estimate): ,061,000. This estimate comprises about 53% "white" and mestizo and about 46% Indian, in addition to some Asiatic and Negro population elements. Lima (pop., 1945 estimate, 657,824) is the capital; other major cities (with 1945 pop. estimates) include Callao (93,313), Arequipa (87,260), Cuzco (49,760), Trujillo (42,875), Iquitos (36,213), Chiclayo (35,986), Huancayo (31,474), Sullana (24,608), Ica (23,614) and Piura (22,133). President in 1949: Gen. Manuel Odría.

History.—During the year 1949 the Odría regime, which had seized power in Oct. 1948, moved to consolidate its position. The military dictatorship was formalized by a decree dated Jan. 8, which announced the suspension of congress and the assumption by the cabinet of all executive and legislative authority. Civil rights were curtailed and press censorship was established in May; a measure promulgated in the middle of that month rendered all women between the ages of 21 and 45 subject to military service in the event of war. Labour groups expressed their opposition to the regime on Jan. 14, when the American Federation of Labor complained in a letter to the United Nations that labour organizations could no longer function normally in Peru; and on May 6, when a regional unit of the International Labour Office, meeting at Montevideo, Uruguay, adopted a resolution censuring the Odría regime for alleged violations of workers' rights. Reportedly opposed to Odría were Luis Flores and Llosa González Pavón, leaders of relatively powerful right-wing political organizations.

Meanwhile, the leftist Aprista (People's) party, outlawed in 1948, was reorganized for more effective underground activity. Aprista leader Víctor Raúl Haya de la Torre, who had been a fugitive since the time of the Odría revolution, and had taken refuge in the Colombian embassy in January, petitioned for safe conduct out of Peru, which was denied by the military regime on Feb. 24. Safe conduct was similarly denied to Fernando León de Vivero and Pedro Muñiz, Apristas who had found sanctuary in the Cuban embassy; and Peru severed diplomatic relations with Cuba on Aug. 19, when it was discovered that León de Vivero and Muñiz had escaped to Havana.

The Odría government developed a program of relaxing controls over foreign exchange, imports and exports. Duty-free importation of agricultural machinery and implements was extended for five years by a decree dated May 25, and President Odría declared on June 2 that the country needed foreign capital to develop technical skill, transportation facilities and irrigation projects. Operations of the Peruvian International Airways were suspended on Feb. 28, when the company was unable to satisfy claims amounting to $800,000 due general creditors and $4,000,000 due note holders.

International conferences and fairs held in Peru during the year included the second Inter-American Conference on Indian Life, which opened at Cuzco on June 24; the fourth South American Conference on Broadcasting, which met at Lima in June; and a world's fair, sponsored by the National Tourist corporation of Peru, held at Lima during October and the first half of November. (G. I. B.)

Education.—In 1944 there were 7,647 public and private primary schools with about 717,000 pupils. The 61 public secondary schools had 12,474 students; there were also about 100 secondary schools, most of which were conducted by religious orders. University education was available at four public universities—Lima, Arequipa, Cuzco and Trujillo—and at the Catholic university of Lima. Appropriations for education in 1949 comprised 16% of estimated government expenditures.

Finance.—The monetary unit is the sol, valued at $0.0538 U.S. currency, free rate, on Oct. 19, 1949. The budget for the fiscal year 1949 balanced government revenue and expenditure at 1,150,000,000 soles. Estimated revenue included indirect taxes, 465,066,000 soles; direct taxes, 217,950,000 soles; and monopolies and state undertakings, 129,-492,000 soles. The direct public debt on June 30, 1948, totalled 1,714,-748,434 soles, made up as follows: external dollar and sterling consolidated debt, 595,049,590 soles; internal consolidated debt, 533.880,865 soles; internal floating and short-term debt, 585,817,979 soles. Notes in circulation on Oct. 31, 1949, totalled 792,000,000 soles; the gold reserve was $20,000,000. Sight deposits on Oct. 31, 1949, totalled 1,192,-000,000 soles; time deposits were 598,000,000 soles.

Trade and Communications.—Exports in 1948 totalled 1,018.413.802 soles; imports were 1,090,619,923 soles. Chief exports were cotton (26%), sugar (22%) and petroleum and products (18%). Principal customers were the U.S. (25%), Chile (19%) and the United Kingdom (16%). Chief suppliers were the U.S. (54%), Argentina (18%) and the United Kingdom (7%).

Railways (1947) totalled 2,612 mi., of which 2,101 mi. were privately owned and 511 mi. state-owned. In 1947, 5,560,713 passengers and 3,724,466 short tons of freight were carried. Motorable roads (1947) totalled 21,554 mi. Motor vehicles (1948) included 20,817 automobiles, 2,160 buses and 16,112 trucks. The principal domestic air line (Compania de Aviacion Faucett) carried 90,486 passengers and 5,867 short tons of cargo in 1948. According to *Lloyd's Register of Shipping*, the merchant marine had 40 steamers and motor ships (100 tons and over), aggregating 86,564 gross tons, on June 30, 1948. Telephones (1948) totalled 43,000.

Agriculture.—Agriculture engaged a large majority of the people; in 1949 about 3,800,000 ac. out of a total arable area of 29,500,000 ac. were under active cultivation. Production of cotton, the chief crop, in 1948 was about 65,950 short tons. Sugar output (1948) included 519,135 short tons, centrifugal, and 28,656 tons, open-pan. Rice production (milled) totalled 151,982 short tons in 1948, a record figure.

In 1946 there were 2,662,000 cattle, 17,288,000 sheep and 931,000 goats. There were more than 1,000,000 alpacas and about one-half that many llamas. In 1948, 8,588 short tons of sheep wool and 2,638 tons of alpaca hair were produced. Rubber production (1948) totalled 1,789 short tons, all of which was used locally. Other forest products included cube (barbasco root; exports, 1947: 5,807 short tons), tagua, quinine, copaiba and quillaia.

Manufactures.—There were in 1949 5 cotton spinning mills, 11 cotton textile mills, 7 rayon weaving mills and a rayon yarn plant. Production of tires in 1948 totalled 87,180 units, and the single cement factory produced 1,653,940 bbl. Paper production was 19,990 short tons. A total of 28 fish-canning plants was in operation. The cost-of-living index stood at 405 in Oct. 1949, and the wholesale price index at 582 (1937=100).

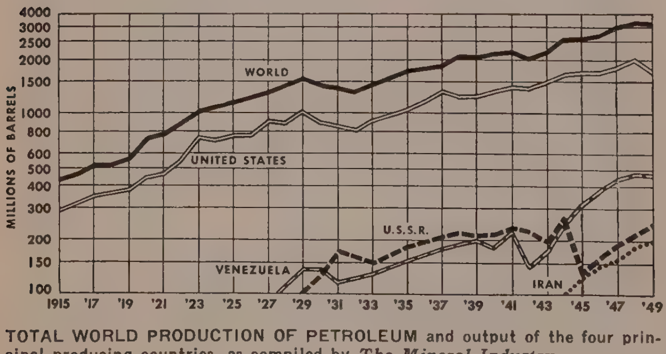
Mineral Production.—Production of the principal minerals in 1948 (value in parentheses) was as follows: copper, 19,917 short tons (57,864,998 soles); silver, 9,288,500 oz. (44,896,374 soles); gold 111,160 oz. (25,289,582 soles); vanadium, 1,006 short tons (3,596,901 soles). Crude oil production totalled 14,068,880 bbl., valued at 242,336,458 soles.

Petroleum.

The year 1949 removed completely the U.S. oil shortage scare of 1947–48. Notable additions to reserves were found in the United States, Canada and Venezuela. The calculated movement under the Economic Cooperation administration to keep U.S. oil exports down and to expand producing and refining facilities abroad in order to supply foreign demand from foreign oil also had a decided effect in deflating the U.S. shortage bubble.

Important Anglo-American oil conferences were held during 1949 on the difficult problems of the dollar deficit. Washington talks began in September, at a time when the sterling area was spending $400,000,000 a year on dollar oil, more than half for the United Kingdom. U.S. oil companies had been long established in foreign markets including the United Kingdom. Their crude oil and refined product supplies for these markets, formerly chiefly shipped from the United States, had been drawn increasingly from their operations in the middle east, Venezuela and other foreign sources. Late in the year it was reported the British government had ordered a drastic cut in British purchases of dollar oil. At the same time ECA officials met in Paris with representatives of Marshall plan nations in an effort to get them to cut back their petroleum refinery expansion programs.

Estimated U.S. oil production of 5,040,000 bbl. daily in 1949 indicated a slight decline from 1948. After early cutbacks, Venezuela oil output reached new all-highs in September and again in October—1,426,500 and 1,433,000 bbl. daily, respectively. During the same months middle east production (Bahrein, Iran, Iraq, Kuwait and Saudi Arabia) maintained figures of more than 1,300,000 bbl. daily.



TOTAL WORLD PRODUCTION OF PETROLEUM and output of the four principal producing countries, as compiled by *The Mineral Industry*

World Production of Crude Oil
(In thousands of barrels)

Year	United States	Per cent	Rest of world	Per cent	Total worl
1939	1,264,962	61	821,198	39	2,086,160
1940	1,353,214	63	796,607	37	2,149,821
1941	1,402,228	63	818,429	37	2,220,657
1942	1,386,645	66	706,455	34	2,093,100
1943	1,505,613	67	751,012	33	2,256,625
1944	1,677,904	65	914,607	35	2,592,511
1945	1,713,655	66	881,259	34	2,594,914
1946	1,733,939	63	1,012,741	37	2,746,680
1947	1,856,987*	61	1,165,043*	39	3,022,030
1948	2,016,282*	59	1,397,912*	41	3,414,194
1949	1,840,000†	55	1,505,000†	45	3,345,000†

*Revised.
†Preliminary.
Source: American Petroleum Institute.

Foreign oil production since the first recorded output—1857 through 1949—amounted to 61,600,000,000 bbl., of which U.S. interests produced 38,900,000,000 bbl., or 63%. Since 1945 the trend of oil production outside the United States had been substantially upward. World production in 1949 was estimated at 1,505,000,000 bbl., compared with 881,259,000 bbl. in 1945. Thus, in 1949, foreign oil production was 45% of the world's, compared with 34% in 1945; the United States, 55%, compared with 66% in 1945. The middle east, South America and Canada reported substantial increases in oil production during 1949. With foreign reserves substantially greater than those of the United States, and with increasing rates of production in such areas seeking world markets, imports of foreign oil into the United States increased 24% in 1949, while U.S. oil exports declined 11%.

Demand for petroleum and its products in the United States continued at near record-breaking levels. Total consumption, including exports, was at the rate of 6,105,000 bbl. daily, compared with the all-time peak of 6,129,000 bbl. daily recorded in 1948. Total demand, including exports, had increased about 40% since 1941, while supply during this period had expanded by 41%.

New capital expenditures in producing, refining, marketing and transportation facilities in 1949 exceeded $2,000,000,000; total expenditures of this kind during the three years 1947–49 had amounted to $6,400,000,000. Estimated gross capitalization of the U.S. oil industry exceeded $23,000,000,000 in 1949.

Exploratory drilling in the United States in 1949 was at the highest rate in the history of the industry, with 9% more wildcat wells drilled. A new deep drilling record exceeding 20,000 ft. was made. In 1948, 4,200,000,000 bbl. of U.S. petroleum liquid reserves were added, making the proved underground inventory nearly 27,000,000,000 bbl. at the end of the year, after a production of more than 2,000,000,000 bbl. of oil. Further substantial additions were made to reserves during 1949.

The ratio of reserves to production was about 13, approximately the same as for the preceding 24 yr. In fact, the ratio of reserves to production in 1925 was 10; since that date the United States had produced more than four times as much oil as was then reported to be in proved reserves, and it still had 27,000,000,000 bbl. in the unproduced underground inventory.

At the close of 1949 there were 443,600 producing oil wells and 64,750 natural gas wells in the United States, producing in 28 states. Petroleum refining capacity had been expanded since 1939 by more than 40% to provide for the increased consumer

	Thousands of barrels
Proved reserves, Jan. 1, 1925	7,500,000
New oil discovered, 1925–48	48,514,949
Total	56,014,949
Production, 1925–48	29,193,722
Proved reserves as of Dec. 31, 1948	26,821,227

LUID CATALYTIC CRACKING UNIT under construction, in 1949, at the ayway refinery of the Standard Oil Co. of New Jersey, in Linden, N.J.

emand. On Dec. 31, 1949, the nation's oil refineries had a ombined daily crude oil capacity of about 6,550,000 bbl., comared with a daily capacity at the close of 1939 of 4,721,213 bbl.

More than $100,000,000 annually was being spent by the U.S. il industry in scientific research. One-third of all the chemicals roduced in the United States were based upon petroleum or atural gas. (*See* also CHEMISTRY.) (L. M. F.)

Philadelphia. Philadelphia, Pa., was the third largest city in the United States in 1940 with a total poplation of 1,931,334. By Jan. 1, 1949, the population had inreased approximately 11.3%, to an estimated total of 2,150,000. There was an additional 1,450,000 population in the seven ounties of Pennsylvania and New Jersey which are immediately djacent to the city and commonly included in the Philadelphia etropolitan area. The administration of the city in 1949 was Republican; the mayor was Bernard Samuel.

During 1949, construction of public improvements in Philaelphia involved capital outlays totalling $65,000,000 and covred a wide variety of municipal services. Largest with respect o total outlay was the construction of further units in the rogram to abate river pollution by constructing intercepting ewers and disposal plants to treat all of the city's sewage. Waterworks projects included, in addition to other improvements of the pumping, filtration and distribution works, the rgest plant in the world to treat water by the ozonation rocess.

For the improvement of transportation facilities, work connued on extension of the Market Street subway and on station acilities of the Frankford elevated railroad. An outstanding evelopment was revision of the state highway system in Philaelphia to include the Schuylkill expressway, Philadelphia's first xpressway. With its connections, the expressway would comprise a major part of the city's highway system. Work progressed jointly by the city and state on the new Penrose Avenue bridge across the Schuylkill river and on the widening of Vine street as an approach to the Philadelphia-Camden bridge across the Delaware river. Hundreds of installations were made for better regulations of traffic. Bridges were completed over Cobbs creek and Frankford creek, and the first prestressed concrete bridge in the United States was started to carry Walnut lane over Lincoln drive.

In the city's program to improve and extend its recreation facilities, 8 recreation centres were rehabilitated; new buildings were erected at 13 centres; and 47 new sites were fenced and graded for immediate use.

A reception centre for dependent children was put in service; work proceeded on a new neurological building at the Philadelphia General hospital; one branch library was completed, and another was started; and a new Carnivora building was begun at the zoological garden. Plans advanced for the redevelopment of ten areas of the city and for the construction of public housing.

The level of industrial employment, which had attained a peak of more than 350,000 in 1947–48, dropped only slightly during 1949. Total bank deposits also attained an all-time high in 1947 but decreased slightly during the next two years. Approximately 50,000 new dwelling units had been constructed since 1940, and an additional 30,000 had been created by the conversion of existing single family structures into apartments. Residential construction decreased slightly during 1949, but there was a considerable increase in industrial and commercial construction. (B. SA.)

Philanthropy: *see* DONATIONS AND BEQUESTS.

Philately. In 1949 the stamp-issuing countries of the world celebrated the 75th anniversary of the formation of the Universal Postal union with a total of about 300 new stamps.

New Issues.—Most of the new issues of 1949 in the United States were primarily for postal purposes—largely because of a new policy whereby the post office became the authority for new issues. Besides three air-mail values in the U.P.U. commemorative set (10 cents, 15 cents and 25 cents), several other air mails were issued, including a new six-cent value to replace the old five-cent, and two commemorative air-mail six-cent values. One of the latter marked the founding of Alexandria, Va., in 1749; the other the anniversary of the first flight of the Wright brothers at Kitty Hawk, N.C. Other commemoratives included a centenary stamp for Minnesota, a stamp for the 200th anniversary of the founding of Washington and Lee university, Lexington, Va., a stamp to commemorate the first gubernatorial elections in Puerto Rico, a commemorative for the centenary of the death of Edgar Allen Poe, in the format of the writers series of a few years back, one for the tercentenary of the founding of Annapolis, Md., and a commemorative for the final encampment of the Grand Army of the Republic.

Bermuda issued a series of three stamps to commemorate the centenary of the first stamp, a postmaster's provisional, issued there. After a series of stamps in western Germany in each zone and subzone, an agreement to stabilize exchange resulted in the stamps of each state or district being declared legal for postage in all western Germany. Baden issued a stamp with the portrait of Carl Schurz.

Devaluation.—The devaluation of many currencies had little repercussion in stamps. Market prices recessed slightly in current issues for the countries affected, in terms of hard currencies. Some values, in Swiss gold centimes, were no longer valid for the international service for which they were originally designed.

Societies.—In Oct. 1949 the Chicago Philatelic society celebrated its 1,500th consecutive semimonthly meeting. More than 400 members and visitors attended the meeting, which was signalized by a commemorative medal.

The Junior Philatelic society of London, Eng., marked its 50th anniversary in Nov. 1949. From a charter list of 10 members, it had expanded to more than 3,000.

Stamps for the Wounded, a nonprofit, nonsectarian organization of all U.S. stamp collecting organizations sent teams of men and women to hospitals with stamps and materials that had been donated to veterans.

Bibliography.—Volume II of the *Encyclopaedia of British Empire Postage Stamps*, published by Robson Lowe Ltd. appeared, dealing with the stamps of British Africa. The 1950 volumes of the various standard catalogs appeared in 1949. A new printing of Mannel Hahn's *So You're Collecting Stamps* also appeared. (M. Ha.)

Philippines, Republic of the.

This republic situated in the western Pacific ocean east of French Indo-China, comprises an archipelago composed of almost 7,100 islands, totalling 115,600 sq.mi. The population by the census of Oct. 1, 1948, was 19,234,182. The chief city is Manila, the capital, whose metropolitan area held about 1,300,000 persons. Other sizeable cities are Cebu (167,000) and Iloilo (110,000). About 10,000 U.S. citizens and 12,000 occidentals from other countries live in the islands. By official count Chinese number about 140,000, but the actual fullblooded Chinese population exceeds 200,000. Most Filipinos are Catholic in religion (Roman Catholic or native Aglipayan Catholic). In the southern islands live some 800,000 Mohammedans, while about 425,000 Protestants and almost 700,000 pagans are widely scattered.

History.—Politics dominated the stage during the year 1949. Elpidio Quirino, having succeeded Pres. Manuel Roxas upon the latter's death in April 1948, became a candidate for the presidency at the elections in Nov. 1949. Party politics provoked many charges of corruption and dragged up the issue of wartime Japanese collaboration, so that the election campaign was a rough one. Senate president and Liberal party leader José Avelino, ousted from both posts on charges of selling war surplus property, led a rebel wing, President Quirino heading the main party. The strongest opposition came from Nacionalista party candidate José B. Laurel, wartime Japanese puppet president. In the election on Nov. 8, military pressure, violence and disorder resulted in protest concerning nearly one-half the total votes cast. On almost complete returns of Nov. 21 the count stood: Quirino 1,711,448, Laurel 1,282,994, Avelino 399,931. A short-lived rebellion broke out in Batangas, Laurel's home province, after the election. President Quirino's Liberal party won a majority in congress, controlling about 60 of the 100 seats in the house of representatives, and at least 15 out of the 24 seats in the senate. Inauguration of new officials took place on Dec. 30, 1949.

Agrarian Problems.—The Hukbalahap, originally a wartime anti-Japanese guerilla organization, had become dominated by Communists and had militantly espoused the cause of Philippine tenant farmers. The result of 1948 military punitive expeditions against them was to scatter the partisans throughout the mountain country of Luzon. Campaigns during 1949 made little headway toward eliminating the Hukbalahap, though they formed no major internal threat during the year. An unfortunate result of partisan activities was the highway ambush killing, in April 1949, of Mrs. Aurora Quezon, widow of the first Philippine president, Manuel Quezon.

Changes in agrarian legislation during 1947–48 made technically possible the peaceful amelioration of tenant problems, but landlord domination of central Luzon's rice lands prevented effective agrarian adjustment and maintained the basic unrest which could be exploited by the Hukbalahap. Expansion of colonial land settlement projects in the southern Philippines was undertaken during 1949 both to help increase agricultural production and to alleviate Luzon's agrarian problems.

Rehabilitation.—The Philippine bureau of public works, with the co-operation of the United States Public Roads administration, had by the end of 1949 rebuilt and extended the highway system. The United States War Damage commission expected to release about $185,000,000 between July 1949, and June 1950, in partial settlement of major public and private claims. Small claims were paid in full during 1947–48, leaving major claims to be liquidated by annual instalments during the period 1948–51.

Inflationary postwar construction costs prevented full restoration of many prewar buildings, public facilities and industrial plants. Two November typhoons during 1949, taking abnormal southern paths across northern Mindanao, Negros and Palawan Islands, destroyed about 75,000 homes, killed more than 500 people and did millions of dollars damage. However, the steady issue of U.S. funds to private persons and public agencies offset gradually declining price levels and continued to underwrite Philippine reconstruction to a considerable degree.

Finance and Trade.—The wartime destruction of homes, public buildings, factories and capital equipment and the disappearance of consumer goods created tremendous shortages in the Philippines, which were accompanied by greatly decreased productive capacity of raw materials and export commodities. Postwar trade showed an extraordinarily large volume of imports and a decreased volume of exports, in contrast to prewar trade which normally showed a surplus of exports. In 1949, most Philippine trade still was with the United States. Wartime losses had been offset somewhat, furnishing an extremely fluid purchasing strength. This liquid resource was devoted to the import of all types of consumers goods. Though agricultural productivity for home-use crops was above normal, by the end of 1949 the export volumes of sugar, abaca and tobacco had not yet returned to prewar levels. Only coconut products among the standard chief exports, exceeded prewar production. The 1949 annual income approximated $2,250,000,000, compared with about $1,750,000,000 during 1946. During 1947–48 adverse trade balances had reduced financial reserves. Despite import controls set up late in 1948 imports for the first half of 1949 exceeded those for the first half of 1948 and, on Aug. 31, 1949, international currency resources had dropped to $235,000,000. The latter part of 1949 saw increased controls over consumer imports and a still more restricted program was announced for 1950.

The cost of living had been falling steadily, and by Nov. 1949, was down to 339.3 as against a 1941 base of 100. The value of the Philippine peso, against a 1941 base of 100 centavos, had risen by the same date to approximately 44 centavos. In Dec. 1949 the domestic buying rate for U.S. dollars was 2.008 pesos per dollar; the domestic selling rate was 2.010 pesos per dollar.

Agriculture and Industry.—The year 1949 was the first of a five-year program of agricultural expansion and industrial development designed to even the balance of trade and maintain the advance in the standard of living. The 1948–49 rice crop of 2,660,000 short tons was one of the largest ever grown, but still was insufficient to feed the growing population. Increased production of rice, which was already the leading crop was one of the chief aims of the five-year program. Sugar production for the crop year 1948–49 was 728,000 tons, with 27 refineries operating. For the crop year 1949–50 there were expected to be 29 refineries in operation and the yield was estimated at about 830,000 tons, a vital part of the export program. Timber production exceeded the prewar normal during 1949, with a cut of 1,037,000,000 bd.ft., permitting a small export program.

The industrial phase of the new program was concerned with electric power development, the home manufacture of consumer goods, the production of fertilizers and the increased processing of products formerly exported in the raw state. During the year the manufacture of such items as cotton textiles, rubber shoes and clothing, glass, nails, paper, plywood and cement produced about half the prewar volumes. Most of them showed increases during the year as general parts of the program. Further expansion was inhibited by the lack of capital funds. (J. E. Sp.)

Philosophy.

New works displayed a wide range of vigorous intellectual activity in 1949, with emphasis on (1) study of great philosophers, (2) the problem of history, (3) scientific philosophy and the problem of human knowledge, (4) international co-operation among philosophers.

Great men who received scholarly attention represented every period of history. Some hitherto unpublished philosophical lectures of Samuel Taylor Coleridge were printed. A new life of

George Berkeley by H. A. Luce appeared as a companion volume to a projected new edition of Berkeley's works in nine volumes, one of which had been published. Valuable for the study of Immanuel Kant's ethics were two new translations from his writings in this field: *The Critique of Practical Reason and Other Writings in Moral Philosophy,* translated by Lewis White Beck, and *The Moral Law, or Kant's "Groundwork of the Metaphysic of Morals,"* translated by H. J. Paton. Publication in Paris of the works of great French philosophers in a new set of about 50 volumes, *Corpus Général des Philosophes Français,* was begun; the first volume to appear contained the philosophical works of Etienne Bonnot de Condillac. The bicentennial of the birth of Johann Wolfgang von Goethe was celebrated by philosophers along with all men of letters. A large number of books appeared, many of them consisting of selections from Goethe's writings. U.N.E.S.C.O. published a volume of tribute entitled *Goethe. Homage. 1749–1949.* Among other publications were Arnold Bergsträsser's *Goethe's Image of Man and Society,* Jean Boyer's *Pour Connaître. Le Pensée de Goethe,* and C. R. Joy's translation of Albert Schweitzer's *Goethe. Four Studies.* John Dewey published a new book, *Knowing and the Known,* with Arthur F. Bentley as coauthor.

Many-sided Albert Schweitzer increased his already large audience in the English-speaking world with the American publication in a single volume of the first two parts of *The Philosophy of Civilization.* Schweitzer's appearance at the Goethe celebration at Aspen, Colo., was widely noted in America. Among other interpretations of history, culture, and civilization were Karl Löwith's *Meaning in History: The Theological Implications of the Philosophy of History;* Reinhold Niebuhr's *Faith and History: A Comparison of Christian and Modern Views of History;* Huntington Cairns's *Legal Philosophy from Plato to Hegel;* Stringfellow Barr's *The Pilgrimage of Western Man;* and a translation into English of Bertrand de Jouvenel's *On Power: Its Nature and the History of Its Growth.* Diagnosis of the world's political ills, with therapeutic suggestions, occurred in the two several-authored books, *Ideological Differences and World Order,* and *Foundations for World Order.*

The announcement by Albert Einstein in Dec., 1949, that he had succeeded in working out a "generalized theory of gravitation" which would probably bring all known physical phenomena under one concept or law, was as much a philosophic as it was a scientific event. It was fitting that a distinguished volume entitled *Albert Einstein, Philosopher-Scientist* (the seventh volume in "The Library of Living Philosophers" edited by Paul Arthur Schilpp) should have been announced for publication in the same month. Other books of distinction in the philosophy of science were *Philosophy of Mathematics and Natural Science* by Hermann Weyl, *Modern Science and Its Philosophy* by Philipp Frank, *Scientific Autobiography and Other Papers* by Max Planck, *The History of Nature* by C. F. von Weizsäcker, *Natural Philosophy of Cause and Chance* by Max Born, *Studies in Philosophy and Science* by Morris Cohen, *Probability and Induction* by William Kneale, and English translations of *The Theory of Probability* by Hans Reichenbach, and *Philosophy of Nature* by Moritz Schlick. The "science" of *Cybernetics* (communication engineering) was introduced in a book of that title by Norbert Wiener. *Human Knowledge, Its Scope and Limits* by Bertrand Russell, published late in 1948, received widespread critical attention in 1949. In his 76th year Russell explored once more, in a major work of his long and distinguished career, the relation of sensory experience and theoretical knowledge, setting forth five postulates which he had come to regard as the minimum necessary to justify induction.

So numerous were the important books of the year, some of them posthumous, that a further selection of representative titles can only be arbitrary. Some were: *The Philosophy of Ernst Cassirer* (in "The Library of Living Philosophers"), Otis Lee's *Existence and Inquiry,* Whately Carington's *Matter, Mind and Meaning,* Gilbert Ryle's *The Concept of Mind,* Leon Brunschvieg's *La Philosophie de l'Esprit,* and translations into English of L. F. Vinding Kruse's *The Foundation of Human Thought,* Karl Jaspers's *The Perennial Scope of Philosophy,* and Leonard Nelson's *Socratic Method and Critical Philosophy.*

The debate over existentialism flourished. Catholic, Protestant, and atheistic existentialists opposed each other vigorously, while nonexistentialists opposed them all. There were new books on this subject by Gabriel Marcel, Helmut Kuhn, Jean Wahl and a number of others.

International co-operation among philosophers was evidenced in several ways, most notably by the East-West Philosophers' conference at the University of Hawaii, Honolulu. For six weeks Asiatic and American scholars (with one English representative) studied together to improve their understanding of the two great streams of thought. Progress in sympathetic response was reported. The aim was not to try to work toward a single philosophy for the whole world, but to achieve a satisfying degree of unity in diversity. Some success in moving toward this goal was announced. (E. L. Mn.)

Phosphates: *see* Mineral and Metal Production and Prices.

Photography. Most of the World War II shortages of photographic equipment were definitely a thing of the past in 1949. Competition had set in, and it was again a consumers' market with many downward price adjustments

LOWER MANHATTAN illuminated by ten photoflash cartridges of 50,000,000 candlepower each, dropped from a B-17 in June 1949 during a U.S.A.F. test of new photographic equipment

among the various manufacturers. There was a big trend toward the use of miniature cameras, especially in combination with the colour films, new lantern slide viewers and projectors. Interest in the amateur and creative field of photography was also accelerated.

More than 67% of all photography in the United States was in the technical and industrial fields by the end of 1949. There were about 15,000 commercial and portrait studios; 4,000 photofinishing plants; 3,500 graphic arts establishments for the printing industry; 55,000 X-ray laboratories; 3,000 industrial photographic departments; 500 motion-picture producing firms; and 600 newspapers with newsphoto laboratories. The United States was exporting cameras and films at a rate of about $60,000,000 a year, or ten times the prewar rate.

Notable among the new applications of photography in the scientific field was autoradiography. By the end of the year more than 7,000 shipments of radioactive isotopes, over a three year period, had been made from the nuclear reactor at Oak Ridge, Tenn., to research workers in the United States and 21 foreign countries. This activity meant many new demands upon photography for recording experiments and progress in this field. George A. Boyd and others in the department of radiation biology, University of Rochester school of medicine and dentistry, Rochester, N.Y., carried on extensive work in autoradiography. In this type of photography, the sensitized film (Nuclear Track Emulsion B made by the Eastman Kodak Co.) is placed in contact with the radioactive isotope and allowed to make the image by prolonged exposure.

International Photographic Industry.—Great progress was made during 1949 in re-establishing international trade in photographic products. Germany was rapidly coming into full prewar production by making more than 78,000 cameras per month during the latter part of the year. About 28,000 of these cameras came from the Agfa Camerawerk, under U.S. administration, and more than 3,000 Leica cameras and about the same number of Rolleiflex cameras came from the western zone of Germany per month. A large part of this production was being exported to the United States.

Agfa Camerawerk introduced a line of new cameras such as the Karat and Isolette, sold in the United States under the names of Karomat 36 and Ventura, respectively. Both were of the miniature type, the Karomat 36 with built-in coupled range finder, using 35-mm. film and the Ventura made for use with film making 2¼ x 2¼-in. negatives.

At the International Trade fair in Utrecht, Netherlands, early in April, photographic equipment from both the east and west zones of Germany was on official display for the first time since World War II outside of Germany. From the Dresden works of Zeiss-Ikon came a newly designed Contax "S" camera. The important change in this 35-mm. miniature camera was in the eye-level reflex focusing method, which replaced the former built-in range finder. New models of the Kine Exakta camera were on exhibition, equipped with Hugo Meyer lenses.

Progress in the Netherlands' photographic industry was shown by products from De Oude Delft Optishe Industrie, with their new telephoto, wide angle and enlarging lenses, and the Philips Co. at Eindhoven. The latter company showed their new PF25N flash bulb, available in three different colour temperatures of 3,400°, 4,000°, and 6,000° K. Philips also had a small hand flash lamp outfit for use with their line of flash lamps. Flash photography was slow in developing on the continent, primarily because of the lack of equipment and supplies.

Franke and Heidecke displayed models of their Rolleiflex cameras. A new Magnar telescopic lens attachment was of interest. This auxilliary lens fitted over the standard 7.5-cm. Rolleiflex lens to give it an effective focal length of 30-cm. A new Rolleiflex was introduced later in the year with such features as a new Compur shutter with built-in flash synchronization, eye-level viewing and focusing, a full-image magnifier and a new carrying case.

Japan made steady progress in getting its photographic industry back into full production. By the end of the year photographic manufacturing had reached 60% of the prewar production. There were 36 important camera manufacturers employing more than 4,500 workers. The camera industry represented about 37% of the optical equipment industry in Japan. Main cameras for export were in the miniature camera class, using 16-mm. and 35-mm. films. Many were almost direct copies of German cameras like the Contax, Leica and Rolleiflex. The Japanese Motoca 35, Leotax Special and Canon Sil were similar to the Leica. Other cameras in the miniature class included the Nikon, Olympus 35, Mamiya 35, Steky, Minion 35 and the 35-mm. Konica. A number of these cameras were finding distribution in the United States.

United States.—A new du Pont Polymer Print film was a notable addition to the field of colour motion-picture photography. This film was designed to be printed from three black-and-white separation negatives and to be developed in colour during a single passage through a slightly modified conventional developing machine. Formerly the emulsion layers for colour-forming development contained at least three components—gelatin, silver halide and colour former. In the printing film worked out by du Pont, only two components were employed—silver halide and a water-sensitive synthetic polymer playing the role of both gelatin and colour former. The colour former is as insoluble as gelatin; water only swells it. When the polymer is swollen by processing solutions, the colour-forming groups, though bound up in a complex polymer molecule, remain highly reactive with the oxidation product of the developer. Colour prints can be made from separation negatives like the type used in technicolor cameras, or made from Kodachrome, Ektachrome or Ansco Color films. The new synthetic polymer base in this film has constant chemical properties, while the usual type of gelatin varies from batch to batch, requiring great care in film manufacture.

Du Pont also brought out a new cut sheet film for still photography, known as High Speed Pan Type 428 with an A.S.A. rating of 160 daylight and 115 tungsten. Ansco duplicating colour stock, type 232, was in production and being delivered to Hollywood.

A gigantic photographic map of the universe was in preparation at Palomar mountain during 1949 with the giant Schmidt telescope. This project was the joint work of the California Institute of Technology, Pasadena, Calif., and the National Geographic society.

Rolab studios in Sandy Hook, Conn., brought out a new Roger camera timer for time lapse cinematography and animation which consisted of a minute device, hour device, camera motor, frame counter, relay mechanism for intermittent and continuous operation, automatic light-control mechanism and instrument panel. Supplementary equipment included a voltmeter and ammeter for measuring light output, time limit switch, auxiliary light circuit, receptacle for panel work and remote-control button for single exposures and animation work.

Kodak Ektacolor film was made available. This new colour film, first announced in 1947, produces a negative whose colours are complementary to those which will appear in the final print. Ektacolor simplifies the making of colour prints and photomechanical reproductions by eliminating the need for masking and for separation negatives. This film was intended primarily for professional use with artificial light. It can be processed in the photographer's studio.

Kodak Pan Matrix film was also brought out in connection with Ektacolor. This new film permitted positive colour printing matrices to be made directly from Ektacolor transparencies by either contact printing or enlarging through filters without any intermediate steps. A special black-and-white proofing paper for use with Ektacolor film and a special Kodak Vacuum Register board to speed printing with Pan Matrix film were also available.

Kodacolor film, type A was a new colour roll film properly balanced for clear flash and flood illumination. No filters were required for its use with this type of lighting indoors. This film has the same emulsion speed as regular Kodacolor film. It is of the colour coupler type and has a wide colour-reproduction latitude.

A new Kodalith Blue-Sensitive film for the graphic arts was available. The new film, with no antihalation backing, was specifically made for those who want to reverse an image by exposure through the back of the film. The general characteristics of the new film were somewhat similar to Kodalith Ortho film, type II, except that the newer film was not an orthochromatic emulsion.

There was also a new Kodak Commercial Thin Base film for use in gravure printing and layout work where an extremely thin-based film is desirable for making continuous tone negatives or positives. Another sensitized product from this firm was Kodak Opal K paper, giving a bright lustre and rich full range.

A new model of the Kodak Tourist camera incorporating a radically new between-the-lens shutter with an accurate top speed of 1/800 sec. made it the world's fastest shutter of its type, with the widest speed range in the folding camera field. To attain this exposure speed the blades in the new shutter pivot and rotate through a partial circle inside the shutter housing. As the rotation progresses, the shutter aperture is opened and then closed. There is also a built-in flash synchronizer in this shutter.

The Kodak Reflex II camera was a new twin-lens reflex camera equipped with the new plastic Kodak Ektalite Field lens in the viewing system. The insertion of this flat, grooved lens beneath the camera's ground glass increased the over-all illumination on the ground glass 250% and corner and edge illumination by 1,000%. Critical focusing is speeded and made easier and composition is simplified because of the more brilliant image. A new automatic film stop was also incorporated into the camera.

The Eastman Kodak Co. brought out the new low-cost Kodak Pony 828 camera, producing eight pictures from each roll of film. There was also a new 8-mm. roll loading camera for home movie makers, known as the Cine-Kodak Reliant camera, and the new Kodascope Eight-71 projector equipped with a lumenized one-inch f/1.6 Kodak Ektanon Projection lens and a 750 or 1,000-w. lamp. Kodak also introduced a new Brownie Hawkeye camera to make twelve 2¼ x 2¼-in. negatives.

Compared with previous years there was not very much new equipment for the darkroom worker. However the Kodak Flurolite enlarger and the Kodak Hobbyist enlarger were important exceptions. The main feature of these enlargers was the integrating-sphere type of lamp house which combined the best features of the condenser type and diffusion type enlargers. The enlargers accommodate negatives up to 2¼ x 3¼ in. The Flurolite is a more versatile enlarger with many attachments while the Hobbyist is a more simple design to be sold at a lower price.

In the field of high-speed photography the new Kodatron Color Speedlamp was of importance. This new model had approximately 20 times the light output of the former Kodatron Studio model. The power output ranged from 1,000-w.-sec. with one power unit and one condenser to 2,736-w.-sec. with one power unit and three condensers.

ABOVE: "We hope that you have tasted our California champagne?" Below: "Don't you think that the superiority of modern art is based on the fact that, by retreating into the realm of irreality, it invades the libido sphere of the subconscious mind?" Plates from *The Frenchman*, a photo-interview between Fernandel (Fernand Contandin), French comedian, and Philippe Halsman, photographer

A new Graflex 2¼ x 3¼ Century Graphic was produced in the field of miniature press-type cameras. Graflex roll film holders were made for use with the various Graflex cameras. The Super D Graflex single-lens reflex cameras were equipped with a highly specialized Fresnel lens for increasing uniformity as well as intensity of screen illumination in the picture viewing system. A 2¼ x 3¼ Century Graphic camera was made similar in design to the Speed Graphic cameras but without the rear focal plane shutter.

The Polaroid Land camera, introduced at the beginning of 1949, rapidly established itself in the photographic life of the nation. With this camera it was possible to expose and develop a finished picture right in the camera within one minute. By the end of the year nearly 7,000,000 pictures had been taken with these cameras. In addition to the overwhelming majority of cameras used for taking pictures for personal use, many were used in the industrial and business fields where the picture-in-a-minute feature was invaluable for recording purposes.

Stereoscopic photography made steady progress with the Stereo Realist camera and with the new Three Dimension Co.'s Stereo projector which was equipped with Polaroid filters to give unusual stereoscopic effects upon the projection screen.

Bausch and Lomb Optical Co. introduced nine new Animar motion-picture lenses for 8-mm. and 16-mm. photography. There were five standard and four telephotos. The important features of these lenses besides their optical qualities were the spread diaphragm stops for easier readability and the click stops for changing settings without looking at the lens scale. This manufacturer also produced a new series of high-speed projection lenses especially for large motion-picture houses and drive-in theatres, with a speed of f/2.0.

A new Cadet Exposure meter was made by the Weston Electrical Instrument Corp. This meter was designed for simpler operation in the lower price range. It was adapted for use with incident or reflected light readings.

General electric made a new photographic flash tube to operate at speeds of 1/5,000 sec., with an improved triggering circuit for use with lightweight portable power speedlamp units. A new 375-w. photoflood lamp was made with a narrower beam spread which gave more light on the camera subject than the wide-beam 500-w. reflector photoflood lamp. General Electric also produced an extremely powerful photographic floodlight producing light from 7 to 15 times the intensity of sunlight for use with high speed motion-picture work where speeds up to 8,000 pictures per second are required. This lamp produces 75,000 foot-candles of light, as compared with the normal 50-foot-candle level existing in the better indoor lighting systems.

Developments in electron microscopy were not spectacular, though there was a steady stream of new results. In the Radio Corporation of America laboratories at Princeton, N.J., the first quantitative method of testing the symmetry of electron microscope objectives was perfected. A new removable intermediate lens was developed to provide magnifications from 1,000x to 20,000x without changing lenses.

J. H. L. Watson and L. E. Pruess of the Edsel Ford institute succeeded in making some interesting motion pictures of the sublimation of special crystals under the influence of the electron beam in the electron microscope. They did this simply by photographing the fluorescent screen with sensitive film.

Considerable new work was done on the ultra-thin sectioning of tissue. C. E. Hall of the Massachusetts Institute of Technology, Cambridge, Mass., made electron micrographs of crystals made up of molecules of seed globulin. These are the smallest (6 mμ) molecules seen in crystalline form. J. L. Melnick of Yale university, New Haven, Conn., photographed virus-like bodies from human skin papillomas in what appeared to be a crystalline arrangement. In spite of his conservative pronouncements, it was generally accepted that this represented the first demonstration of an animal virus in crystalline form.

The George Eastman House, Inc., a public educational institute to further the knowledge of photography's means, accomplishments and potentialities in every field, was formally opened on Nov. 9 in Rochester, N.Y., with Oscar N. Solbert as director and Beaumont Newhall, curator.

The Museum of Modern Art photography department under the direction of Edward J. Steichen was active with important photographic exhibitions. The large exhibition known as "The Exact Instant" covered the events and faces in news photography during the preceding century. "Roots of Photography" was the next exhibition and included the works of David Octavius Hill, Robert Adamson and Julia Margaret Cameron. Ralph Steiner, Wayne Miller, Tosh Matsumoto and Frederick Sommer had photographs on display representing four phases of contemporary photography in an exhibition called "Realism in Photography." Other exhibitions included pictures to show the roots of French photography and later photographs by Lisette Model, Bill Brandt, Ted Croner and Harry Callahan.

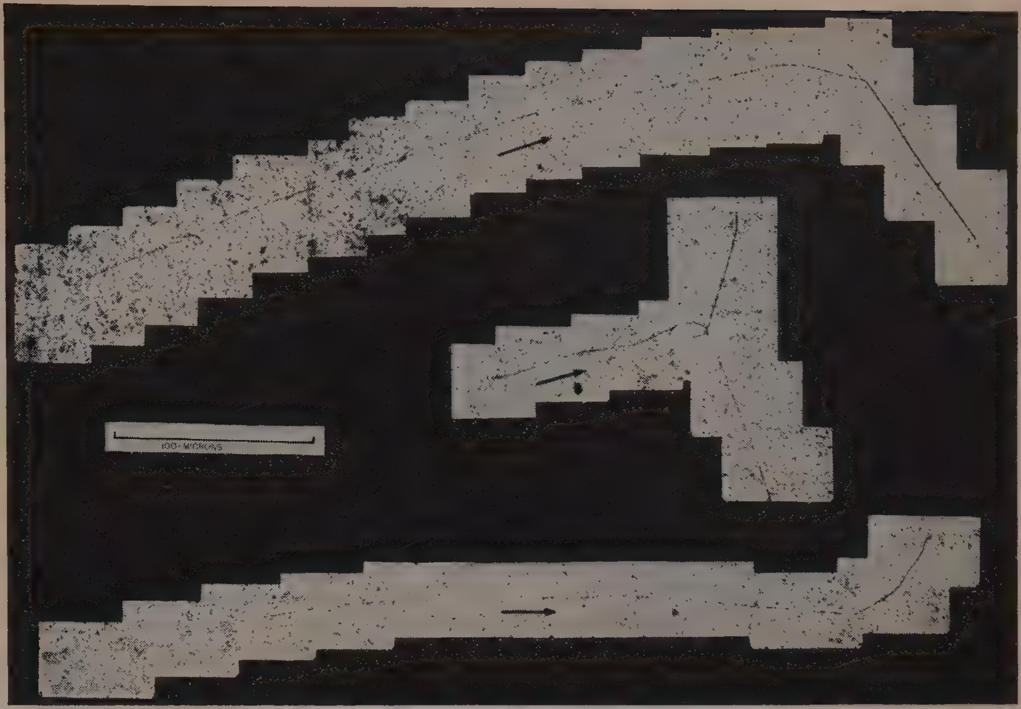
A total of 92 recognized pictorial exhibitions were held throughout the world during 1949, as compared with 88 in 1948. According to the *American Annual*, 3,250 pictorialists exhibited 21,493 photographs, the average salon hanging 234 prints. A remarkable growth in the number of exhibitions devoted to nature photography was noted during the year.

The Progress medal of the Photographic Society of America, highest award in American photography, went to a pictorialist for the first time—J. Dudley Johnston, of London, England, for "inspiring leadership, fostering photographic societies, and absorbing knowledge of photography." (*See* also MOTION PICTURES; NEWSPAPERS AND MAGAZINES; TELEVISION; X-RAYS AND RADIOLOGY.) (W. D. MN.)

Physics. During 1949, while science was still recovering from its exploitation during World War II, considerable advances were made along many lines, notably in microwave physics, in the interpretation of cosmic ray phenomena, in the application of molecular vibrations to the standardization of time intervals, in the cataloguing of the properties of radioactive materials, in low-temperature physics and in the theory of the nucleus. A few special topics described briefly below show the progress made in fundamental physics.

Several important groups of physicists turned their attention to the problem of abstracting the literature of physics. Especially since about 1938, it had become virtually impossible for a physicist to read in full, much less study, all the published papers that interested him, even if all the physics periodicals of the world were accessible. And to a research physicist, not to be abreast of the times was the cardinal sin. It was felt that the problem might be solved by a new abstract service of some kind. Most English-speaking physicists had relied on *Physics Abstracts,* issued monthly in England by the Institution of Electrical Engineers; but judged by modern standards that compilation was believed to have become inadequate in several respects. In order that a practical and acceptable solution of the problem might be reached, the American Institute of Physics, working with the office of naval research, spent the year 1949 in assembling the information necessary for answering questions like the following: How important are abstracts to physicists? How do they try to use the abstracts? What do they think of the abstracts they now have? What kind of abstracts would they like? The results of this study were awaited with interest.

Neutron.—The neutron, an uncharged particle of approximately the same mass as the proton, is a constituent of all atomic nuclei except ordinary hydrogen. The particle is unstable (or radioactive) when liberated into the free state by the breaking of nuclei, but its half-life was known only by theoretical estimate. The half-life had not been measured experimentally for the simple reason that it was impossible for neutrons to be imprisoned within a vessel as atoms of a gas could be. The neutrons, having no electric charge, would escape immediately through the walls of the vessel, no matter of what it was made. Without giving detailed reasons, it may be asserted that the only feasible method of determining directly the half-life of the neutron was by making measurements on a newly born stream of neutrons such as emerges from a nuclear reactor. The experiment would have no chance of success unless the stream of neutrons was very intense. Utilizing the neutron stream, probably the most intense in the world, emerging from the Chalk River (Ontario) nuclear reactor, J. M. Robson was able to measure the intensity of the positive decay protons by a focusing ion-spectrometer. The effect that was measured, and on which the half-life was based, was a proton current that stood out about 30% above the background of the counting devices used. In most experiments in nuclear physics, such a situation would be presumed to lead to fairly reliable numerical results. Robson's final figure was that the half-life of the neutron, as measured directly, lay between 9 and 18 min., in good agreement with theoretical estimates. (For example, in 1947, in the course of a formal lecture, H. A. Bethe estimated the half-life at 20 min.) Independent experiments carried out at the Oak Ridge (Tenn.) laboratories of the Atomic Energy commission, and reported in Nov. 1949, indicated that Robson's result was unlikely to be wrong.



PHOTOMICROGRAPHS of three typical mesons in a photographic emulsion, produced by a 335-Mev X-ray beam from the University of California synchrotron completed at Berkeley in 1949. These are some of the first mesons detected that are known to have been produced by X-rays; arrows show the directions of the tracks. Photomicrographs were useful in showing the identifying characteristics of tracks (the increase of grain density in the emulsion toward the stopping end of the tracks, etc.)

Radioactivity.—The following is quoted from an article by J. H. Webb which appeared in the *Physical Review*, Aug. 1, 1949.

> Following the detonation of the experimental atom bomb at Alamogordo, New Mexico, on July 16, 1945, a radioactive contaminant was encountered in strawboard material used by the Eastman Kodak Company for packaging photographic sensitive films. This paper board was manufactured in a mill situated at Vincennes, Indiana, on the Wabash River. A run of strawboard, produced on August 6, 1945, showed this new and unusual type of radioactive contaminant. X-ray film packed with this board showed fogged spots after about two weeks' exposure.
>
> Measurements of the contaminated spots of strawboard showed no alpha-activity but a fairly strong beta-activity. Absence of alpha-activity ruled out naturally radioactive materials. Measurements of the beta-activity showed a maximum energy of 0.6 Mev. and a half-life of approximately 30 days. Radiochemical studies of the active ash from the strawboard indicated that the material was of the rare earth series. The energy value and half-life of the beta-radiation are compatible with the isotope Ce 141.
>
> All studies point to the conclusion that the radioactive contaminant was an artificially radioactive material which found its way into the mill through the river water. The most likely explanation seems to be that it was a wind-borne fission product derived from the atom-bomb detonation in New Mexico on July 16, 1945.

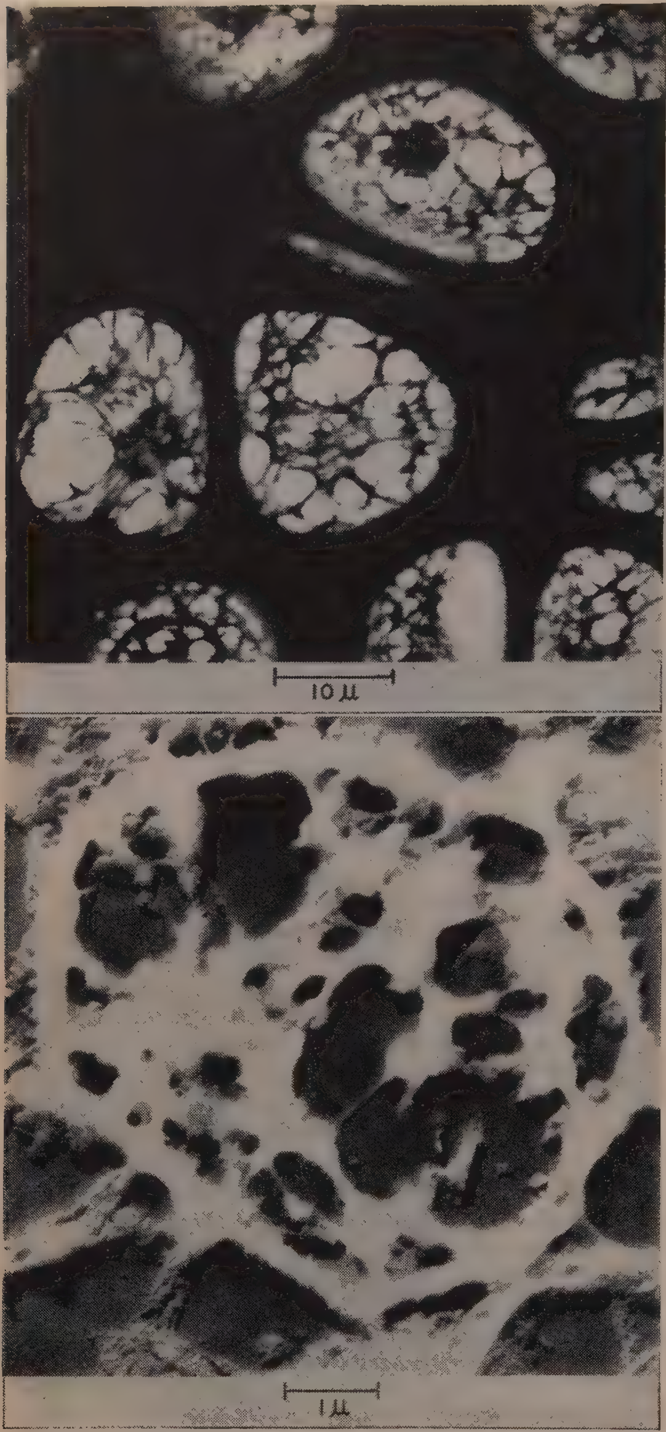
Similar effects were caused by strawboard manufactured in Sept. 1945 at a paper mill in Iowa, several hundred miles from Vincennes, Ind., and on a different watershed. The amounts of radioactive material involved were in all cases exceedingly small, and it was only because the strawboard happened to be used for packaging sensitive photographic film that it was detected at all. Presumably, specks of radioactive dust, perhaps precipitated with rain, were carried down by the rivers and filtered out during the manufacture of the strawboard.

A New Meson.—The photographic methods used in the discovery of new fundamental nuclear particles by C. F. Powell and his colleagues at the University of Bristol, England, since 1946, were adopted in many laboratories throughout the world. Since the examination of photographic emulsions for tracks that proclaim new phenomena is a time-consuming matter, further progress might, for a few years, be expected to be in proportion to the number of investigators engaged in the work. Powell's work established clearly the existence of both π and μ mesons, and the mother-daughter relationship between them. Between 1946 and 1949, a new heavy meson designated by the symbol τ was reported by several workers in the U.S.S.R., in England and in the U.S.

Of these reports, the one supported by the most definite evidence was that of N. Wagner and D. Cooper of the University of Maryland, Baltimore.

The various types of charged mesons are distinguished by the linear densities and the variations of linear densities of developed photographic grains along their tracks, and these differences are interpreted in terms of the different masses and energies of the particles. According to the best recent determinations, π and μ (primary and secondary) mesons have masses 286 and 205 times as great as the electron's mass. The τ meson was found to be much heavier—720 times the electron's mass—but apart from the fact that it might, at the end of its range, be captured by a nucleus which then exploded, or alternatively might end its travel without evidence of being captured, little was learned of its properties. It appeared to originate among the explosion products of a nucleus disintegrated by cosmic-ray action. No family connection of the τ with π and μ mesons was indicated, but if such a connection should exist, its nature might not be determined until an answer had been found to the question whether mesons occur with definite masses or with a continuously variable range of masses.

Terrestrial Magnetism.—To a first approximation, the magnetic qualities of the earth are the same as it would have if it were a "uniformly magnetized sphere." There seems also to be no doubt that the magnetic field that is measured at or near the earth's surface originates from sources inside the earth rather than from any happenings in space outside the earth. The next step in a proper understanding of the earth's magnetism—an explanation of the extent to which the earth's field differs from that of a uniformly magnetized sphere—is, unfortunately, one of tremendous complexity. Measurements have, of course, been made of these differences all over the land and oceans, but a



ELECTRON MICROGRAPHS of specimens prepared by a microsectioning method developed at the national bureau of standards, in 1949, for obtaining very thin sections of biological tissue. Top: cartilage from a frog's eye, magnified 1,500 times; bottom: cell nucleus from a frog's eye near the area of rods and cones (10,400 times)

satisfactory explanation of their patterns has been elusive. Furthermore, the patterns change slightly in a definite but complex manner from year to year.

Some new ideas on the subject were published during 1949 by E. C. Bullard, director-elect of the National Physical laboratory, England. Discarding the idea of any permanent magnetism, he sought to explain the observed phenomena in terms of large-scale electric currents within the liquid metallic core of the earth. In order that the magnetic effects might be reasonably permanent, it had to be assumed that inside the core of the earth the flow of electricity and the flow of material of which the core is composed must be such as to simulate a self-exciting dynamo, so that the flow of charge created the magnetic field across which liquid metal moved only to have more electric currents induced in it. Such a supposition was eminently reasonable, provided that a source of energy available for maintaining the mass-flow could be identified. Bullard suggested that either (1) the liquid core did not follow faithfully the precessional motion of the earth or what was more likely (2) thermal convection currents existed to carry heat from the core outward. The second of these assumptions was partially developed, without serious conflict with established facts, to explain the major part of the earth's magnetic field. Local irregularities in the field and secular changes thereof were then presumed to be the result of two further effects, the occurrence of local eddies in the liquid interior and distortion of the regular field by magnetic materials in the solid crust. Before the theory could be finally accepted, it would be necessary to prove that it was equally applicable to other astronomical bodies such as the sun.

Origin of the Elements.—The known elements are not all equally abundant in that part of the universe that is accessible to scientific observation. Striking regularities in abundances appear side by side with striking irregularities. For example, it has been proved that light elements are more abundant than heavy ones and that there is a gradual change in relative abundance from hydrogen (the lightest element) to the heaviest elements, covering a factor of about 10,000,000,000. At the same time there exist violent fluctuations of abundance from one light element to the next. To illustrate these generalities, it can be asserted that for every atom of gold in the universe, there are 10,000,000,000 atoms of hydrogen, 1,000 atoms of fluorine and 1,000,000 atoms of neon. Since all nuclei are composed of neutrons and protons, it seems clear that these regularities and irregularities of abundances must reflect the manner in which nuclei were originally formed from their constituent elementary parts. The problem was to discover how the elements originated.

M. G. Mayer and E. Teller summarized the existing situation, calling attention to the probability that light elements may have been formed by thermonuclear reactions, in the course of which new nuclei were built by the addition of protons to already existing nuclei. They emphasized strongly the conclusive evidence that, at the time of formation of heavy nuclei, the proportion of neutrons exceeded that which is now found; otherwise, the heaviest isotopes of the heavy elements would not be the most abundant. They then explored the hypothesis that heavy nuclei were formed by the disintegration of a cold nuclear fluid containing a great excess of neutrons. Considering this as a kind of fission and neutron-evaporation process operating on nuclei much heavier than now exist, Mayer and Teller predicted a theoretical distribution of isotopic nuclei in the range of atomic numbers 62 to 78, that agreed remarkably well with actual observations. In deriving this distribution of abundances among the isotopes of each of a series of elements the authors pushed the theory one step farther than it had been carried before.

(*See* also STANDARDS, NATIONAL BUREAU OF.)

Einstein's Unified Field Theory.—Physicists had been for 150 years acquainted with effects separately described as electricity, magnetism, light, gravitation. For example, a thunderstorm was an electrical phenomenon, the pointing of a compass toward the north a magnetic one, the scattering of light was optical, the falling of an apple to the ground was gravitational. When they were first discovered, all four types of effects were unrelated—in different compartments of knowledge. Through the work of Michael Faraday, James Clerk Maxwell and a host of others, the fields of electricity, magnetism and light were brought under one discipline, so that it was known, for example, how the movement of electric charges produces light, or the movement of magnetic fields produces electric currents. Gravitation alone remained isolated, having no apparent connection with electromagnetic or optical phenomena.

Albert Einstein's new "field theory" brought gravitation into the fold, as it were, providing a formal connecting link between gravitational, electromagnetic and optical effects. It was felt that many years might elapse before a point could be found at which his theory could be checked by experiment.

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FILMS OF 1949.—*Introduction to Physics*; *Measurement of Electricity*; *Mechanics of Liquids*; *The Nature of Energy* (Coronet Instructional Films); *Light and Shadow*; *Machines Do Work*; *Solids, Liquids and Gases*; *Things Expand When Heated*; *Transfer of Heat*; *Transmission of Rotary Motion*; *What is Sound?* (Young America Films Inc.); *Making Electricity* (Encyclopædia Britannica Films Inc.); *Science At Your Service* (National Film Board of Canada). (T. H. O.)

Physiology.

Natural Occurrence of Antithyroid Compounds.—In preceding years more than a dozen vegetables had been shown to be capable of producing goitre in laboratory animals under favourable circumstances. Many chemically pure substances have this property, and compounds containing any of six different radicles or groupings may be effective. The activity of a particular compound may be greater or less in man than in certain species of animals, and may vary with the environmental temperature and other circumstances. Some of these substances are used in medical practice to depress an overactive thyroid. While many such antithyroid compounds may occur in foods, it was still difficult in 1949 to determine their importance in relation to the occurrence of goitre in man.

The thyroid gland concentrates iodine by removing it from the blood which circulates through the gland. Radioactive iodine is similarly concentrated and its concentration in the thyroid can be shown by placing a Geiger-Müller counter over the gland and making serial counts of the gamma radiation. The rate of concentration of radioactive iodine in the normal individual is regular and predictable. When an antithyroid substance, either in a pure form or taken in the form of food, is administered the accumulation rate of radioiodine is slowed or stopped altogether. A series of 61 different foodstuffs were tested, and the yellow turnip was shown to be actively antithyroid. The active principle of natural antithyroid compounds in turnips was isolated and proved to be L-5-vinyl-2 thio-oxazolidone; its structure was established by synthesis. It has about the same activity as thio-uracil in man. While it occurs in the seeds of other Brassica it was not obtained from the edible portions of cabbage, kale, broccoli or cauliflower. It apparently occurs in a combined form in parts of the plant, and boiling may prevent its liberation. Rape-seed goitre is probably due to this compound. It may be responsible for the goitre of sheep fed on turnips and possibly for a late epidemic of goitre in western Europe among the people who had to subsist largely on Brassica vegetables.

Intravenous Infusions of a Combined Fat Emulsion into Human Subjects.—A 10% combined fat emulsion with a potency of approximately 1,300 cal. per litre was infused intravenously into 76 human subjects. A total of more than 250 litres was injected during the test; five patients received two litres of the emulsion during one infusion period instead of one. The constituents of the emulsion, which must be sterile and thoroughly homogenized, are solutions of protein hydrolysate, glucose, gelatin and refined coconut oil. The particle size was less than one micron. This precaution was taken to prevent pulmonary embolism which could result if the fat particles were too large to pass through the capillaries of the lungs.

Chills occurred with 9% of all infusions, the majority of which came concomitantly with a high-temperature reaction. This was the severest reaction encountered. The blood pressure generally rose during the infusion, followed by a moderate fall which persisted for two hours. The haemoglobin, haematocrit, red and white cells tended to fall below their initial values during the course of the infusion, returning to their initial values near the termination of the infusion. Counts were made of the tiny fat particles (chylomicrons) in the venous blood. The average counts rose from below 10 to over 350, reaching a peak near the mid-point of the infusion, which usually lasted several hours since the rate of the infusion was 20 to 80 drops per minute.

Microchemical determinations of the blood lipids showed a rapid rise and an equally rapid fall to normal limits within two hours after the infusion was completed. Other follow-up studies of the lungs, kidneys and liver did not indicate any serious toxic effects or late effects ascribable to the emulsion.

Measurement of Output of Individual Sweat Glands and Their Response to Stimulation.—The quantity of sweat produced depends on the output of the individual sweat gland and the number of glands actively secreting. The latter was determined by the iodine-starch-paper technique. Tincture of iodine was painted on the skin and allowed to dry; a piece of paper containing starch (such as white bond paper) was then applied to the skin for a short period of time. A dark spot appeared on the paper for each secreting sweat gland, presumably caused by the reaction between iodine and starch in the presence of moisture. The number of glands producing sweat in a given area and for a given time interval could be determined. The amount of sweat secreted was measured simultaneously in an adjacent area of the skin by the capsule method. A small metal capsule containing calcium chloride and absorbent paper was thoroughly dried, covered and weighed on a precision balance. The cover was taken off, the capsule inverted over the skin and taped down for the test period. Then the capsule was removed, the cover replaced and again weighed. The gain in weight was due to moisture collected in the capsule.

This research showed that the number of actively secreting glands was greatest on the back of the hand, less on the forearm and least on the arm. In the lower extremity the order was back of the foot, leg and thigh. The average output per gland per minute in a warm environment varied from .0021 to .0043 mg. Sweating responses were determined in the upper extremity while the feet and legs did a measured amount of work. This increased both the number of actively secreting glands and their total output. Mecholyl introduced into the skin by electric current (iontophoresis) increased still further the number of secreting glands and the average output per gland. Sitting in hot water caused increased sweating of the upper extremity. The results indicated that the first response of the sweating mechanism was to increase the number of functioning glands but if this is insufficient there follows an increase in the output of the individual glands.

Respiration in the Newborn Infant.—Proper treatment of respiratory insufficiencies occurring in the infant depends upon a knowledge of its respiratory exchanges. K. W. Cross developed a plethysmographic method in which the child lies comfortably in a closed compartment with its face protruding, so that it can breathe room air. To produce an airtight seal between the compartment and the child's head he copied a helmet used by the Japanese navy in World War II; it was a pneumatic cuff which when inflated framed the face. An ink-writing volume recorder was connected to the plethysmograph. Air moved into and out of the volume recorder with each change in the size of the chest.

The study was made on 26 normal babies under two weeks of age. The average rate was 28.6 (S.D. 5.2) respirations per minute. The average minute volume was 589 c.c. per minute. Evidence was obtained that there is a positive relationship between the weight of the infant and the volume of air breathed per minute.

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(F. E. Fe.)

Pieck, Wilhelm (1876–), German politician, was born at Guben, Brandenburg, Jan. 3. In 1905 he became secretary of the International Socialists in Bremen, where he was associated with Karl (Sobelsohn) Radek, the Communist writer. In 1906 Pieck was elected to the Bremen city parliament. He went to Berlin in 1907. During World War I he was arrested for illegal antiwar activity, and was sent to the front and finally to a punishment company. He deserted and escaped to Holland where he edited an antiwar paper, which circulated secretly in Germany. In Oct. 1918 Pieck returned to Berlin and played a leading part in the revolution. A 14-year period of political legality in the Prussian diet, the Prussian state council and the *reichstag* followed. Pieck organized the *Rote Hilfe* (Red Aid) for imprisoned Communist party members. After a short arrest in 1933 following the *reichstag* fire he fled to Moscow where he remained for 12 years. After his return to Germany in 1945 he assumed leadership of the Communist party and became chairman of the Socialist Unity party, the new amalgamation of the Communist party with extreme left Social Democrats. On Oct. 11, 1949, he was elected president of the Communist-dominated German Democratic republic in the soviet zone of Germany. (D. A. Sn.)

Pig Iron: *see* Iron and Steel.
Pigs: *see* Livestock.
Pineapples: *see* Fruit.

Pittsburgh. Business activity in the Pittsburgh district in 1949—production, trade and shipments—was 160% of the 1935–39 average, or about 14% less than in the preceding year. Industrial production was marked by a decline of 17%, in part reflecting prolonged strikes in the steel and coal industries. Steel operations were at 77.7% of capacity, down 17%, while coal production was 32% less than in 1948.

The number of persons employed in the first 11 months was reported by the Bureau of Business Research of the University of Pittsburgh at 113.1% of the 1939 average, or 10% less than in the corresponding period of 1948. Pay rolls were down 8%. Department store sales in the first 11 months declined 8%.

Progress was made on public and private building programs designed to change fundamentally the central business district. Land acquisition was completed for a park at the confluence of the Monongahela and Allegheny rivers. The Urban Redevelopment authority joined with a life insurance company in plans for three 20-story office buildings on 23 ac. adjoining the park. Ground was broken for a 40-story office building for the Mellon National Bank and Trust company and the United States Steel corporation. Three Mellon foundations made grants to the city totalling $4,000,000 to acquire and landscape as a park a block in the heart of the business district. Beneath it five floors of parking facilities, it was announced, would be built by the Pittsburgh Parking authority. The authority designated four other areas for public-parking garages to accommodate approximately 2,000 cars, to be built in 1950.

On the south side the urban Redevelopment authority announced plans for acquiring 165 ac. and making extensive changes in street patterns and land use. This development was to be accompanied by a multimillion dollar expansion by Jones and Laughlin Steel corporation.

Progress continued on highway improvements at the eastern approach to the city. Ground was broken for the western extension of the Pennsylvania Turnpike to the Ohio line.

The W. L. and May T. Mellon foundation made a grant of $6,000,000 to build and endow a graduate school of industrial administration at Carnegie Institute of Technology.

The city's population was estimated to have passed the 700,000 mark and that of Allegheny county to be 1,500,000, moderate increases since 1940. The U.S. census bureau fixed the Pittsburgh metropolitan area as including four counties of 3,053 sq.mi., with a population of 2,082,556. Taxable real estate in the county was $2,067,000,000, in Pittsburgh $981,082,764.

David L. Lawrence was re-elected mayor and Democratic candidates carried other local offices. (C. F. Ls.)

Pius XII (1876–), the 262nd successor of St. Peter in the see of Rome, was elected by the cardinals in conclave on his 63rd birthday, March 2, 1939, and was crowned as pope on March 12. (For details of his early life, see *Encyclopædia Britannica.*)

In 1949, in an allocution addressed to the secret consistory of the College of Cardinals, the pope declared the object of the trial of Joseph Cardinal Mindszenty was to disrupt the Catholic Church in Hungary and branded as completely false the assertion made in the course of the trial that the whole question at issue was that the apostolic see, in furtherance of a plan for political domination of nations, gave instruction to oppose the republic of Hungary and its rulers.

In a speech to delegates of the International Catholic Employers association, Pope Pius urged closer collaboration between management and labour. He told employers that "workers should be assigned a fair share of responsibility in the development of the national economy" and urged them to adopt an enlightened social policy in the interest of collectivity as a whole. He urged Belgian workers, who made a pilgrimage to Castel Gandolfo in September, to draft a "statute of public law and economic life." This was suggested because of the temptation to misuse the power of labour unions. He made it clear that labour unions had the blessing of the church provided they seek to "promote the Christian order in the labour world." A group of visiting businessmen were told by the pope the Catholic Church approved of nationalization of industry within certain limits. He said the mission of public rights was to serve the private rights, not to absorb them and that the national economy is not by nature an institution of the state.

On July 13 the Congregation of the Holy Office, headed by the pope, issued a decree against communism. It excommunicated all those defending and spreading the materialistic and anti-Christian doctrine of the Communists. Anyone who "knowingly and freely" enlisted in or supported the Communist party and read, or wrote, in any publication in support of Communist doctrine or activity was to be barred from the sacraments.

Roman Catholic jurists throughout the world were called upon by Pope Pius, speaking to the central committee of the Union of Catholic Lawyers, to abstain from passing sentences based on laws that the church considered unjust. In discussing divorce, the pope said: "The Catholic judge cannot pronounce, unless for motives of great moment, a decision of civil divorce (where it does exist) in a marriage valid before God and the church."

In speaking to members of the United States senate military appropriations subcommittee on Nov. 17, Pope Pius advocated rearmament, making a very careful distinction between force as an instrument for the enslavement of peoples and force as a means to resist aggression.

In his Christmas message the pope called upon all Protestant Churches to "return to the unity of Rome" and urged all Christians as well as Jews to support the Roman Catholic Church in the creation of a united front against militant atheism.

One encyclical was issued demanding internationalization of Jerusalem, freedom of education and worship for religious institutions and freedom of access for Catholic pilgrims in the new state.

On March 12, 1949, Pope Pius celebrated the tenth anniversary of his coronation as head of the Catholic Church. (*See* also Roman Catholic Church; Vatican City State.)

(J. LaF.)

Plague, Bubonic and Pneumonic.

Progress in the control of epidemics of plague, and in protection against this infection was reflected in the recommendations of 20 specialists who conferred in Washington, D.C., in Oct. 1948, and at a sanitary convention at Paris in November. They decided that search for previously unrecognized zones of enzootics should be continued; and, because of the widely spread use and efficacy of insecticides such as DDT (dichloro-diphenyl-trichlorethane) international prophylactic procedures could be reduced. They recommended a more intense comparative study of the relative values of immunizing vaccines prepared from killed bacilli or from live organisms; and the designation of laboratories of world-wide distribution for the conservation and supplying of strains of bacilli of tested antigenic value; and suggested preconizing prophylactic treatment with sulfamides, or with streptomycin in cases of pneumonic plague particularly, with the belief that such measures would at least reduce the period of observation of contacts.

Though there were no epidemics of large proportions registered during 1949, plague continued to smoulder on; cases were reported in Asia, including sections or provinces of Burma, China, India, Indo-China, Java and Thailand; in Africa, including Belgian Congo, Cape Colony, Madagascar, Orange Free State, Rhodesia, Tanganyika; in the Azores; in South America, including Brazil, Peru, Venezuela; in the United States, where two cases occurred in the state of New Mexico for the first time.

A resurvey was made of the extent and persistence of the infection among the field rodents of western United States by examination of fleas collected from rodents which were shot or trapped, or from their burrows and nests whether in use or deserted. The results of the investigation indicate that the enzootic had persisted or recurred over periods as long as ten years. Infected fleas were found in counties of midwestern states, which might indicate an extension of the enzootic zone eastward to more populous areas.

The longevity of *Pasteurella pestis* under favourable conditions may be of practical significance through its transportation in fleas hidden in cargo. Under suitable laboratory environment it will remain viable and retain its virulence over years. A set of 40 slope cultures of virulent bacilli was made on beef infusion agar in 1923. The tubes were stoppered with corks coated with a mixture of paraffin and vaseline and stored at temperatures of from 5° to 10° C. Subcultures were made in 1943, and from 33 of the originals growth was luxuriant. Twenty-five per cent of the originals were alive in 1948, and inocula made from their subcultures produced febrile reactions in guinea pigs. Three of these which died contained lesions typical of acute plague with bacilli in spleen and buboes. The reactions of the subcultures in carbohydrate media were the same as those of the originals.

Fleas infected with a virulent strain of *P. pestis* were stored *in vacuo*. Lots were removed from time to time, crushed, suspended in saline solution and injected subcutaneously into guinea pigs. The animals developed fever whose course was similar to that of the controls and died within three to four days. The tests were positive after storage of from 12 to 941 days, but were negative after 986 days.

With the extension in ship quarantine practices of the use of sodium fluoracetate (1080) as a poison by ingestion for the destruction of rats, or in other deratization measures, the question arose of the likelihood of invalidating the diagnosis of plague in rats presumably poisoned and found dead. The diagnostic procedure is that of reproducing the disease in guinea pigs by injecting them subcutaneously with a saline suspension of triturated bits of the liver and spleen of the suspected rat. The poison is so potent that it seemed enough might be carried over to the guinea pig to sicken or to kill it; or the poison might have a bacteriostatic effect on the bacillus. A preliminary test was made with rats found dead after the use of the poison (1080) on ships. Guinea pigs injected with the suspensions of rat liver and spleen remained well, but others injected with the stomach contents of the rats developed convulsions within an hour and died. A guinea pig which was inoculated with a virulent culture of *P. pestis* became febrile in two days with manifestations of plague. It was then poisoned by feeding it 1080. Thirty-five minutes later it developed convulsions and died. Upon autopsy it exhibited lesions of acute plague which were proved out by subsequent animal inoculation and by cultural methods. Tests in vitro of the poison revealed no bacteriostatic action on growth of the bacillus in cultures.

The procedures in practice for the limitation of human infection and for the control of epidemics in endemic areas continued to be those of destruction of the local rodents and their fleas; these measures had been effective if accomplished with thoroughness over prolonged periods. Such widespread programs were impracticable in large sections of the world, however, and the prophylactic inoculation of people with plague vaccines became regarded as the best preventive measure practicable. An experience in Africa, described in 1949, exemplified this opinion. In an endemic focus on the west watershed of Lake Albert, extending 100 km. parallel to its border in a zone of 40 km. width, primitive methods of deratization had been practised for ten years without diminution of the rodent population, although only one rodent species, *Mastomys coucha*, prevailed, and 3,000,000 had been killed. These measures were supplemented by the administration of 500,000 vaccinations over the years 1939–46. During this period (1940–46), 132 cases of plague were registered. Sixteen of these occurred among those who had received the vaccine (E.V. of Girard and Robic) three months to six years previously, and 116 were among the nonvaccinated.

The prophylactic value of any vaccine is challenged by the virulence of the organism against whose invasion the protection is designed. The determination of virulence is usually accomplished by repeated, painstaking, comparative laboratory tests on animals. It is evident that simpler tests are desirable either to replace or to curtail supplementarily this costly method, and experimentation was directed in 1949 toward the discovery and measurement of some chemical reaction of *P. pestis* which is allied to its virulence. This seemed to have been accomplished by the measurement of its catalase activity, which was determined by its ability to decompose hydrogen peroxide. The mean amount of decomposition which occurred among 14 strains of variable degree of virulence to mice was as 16.3, to 5.1 among

11 avirulent strains.

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(N. E. W.)

Plant Industry, Soils and Agricultural Engineering, Bureau of: *see* AGRICULTURAL RESEARCH ADMINISTRATION.

Plastics Industry. Consumption of U.S. plastics materials of all kinds in 1949 increased more than 50% over 1946, the first postwar year in which relatively exact figures for the industry were available. While the figures are subject to individual interpretation and to various methods of compilation, Table I gives a working comparison.

Table I.—*Plastic Materials Consumption in Pounds*

(Includes filler for all moulding, extrusion, film and sheeting materials. Other items such as adhesives and laminating varnish based on solid resin only. No protective coatings included except a small amount of vinyl)

	1946 Consumption and shipments	1949 Sales
Cellulose Products acetate and cellulose acetate butyrate	103,000,000	76,000,000
Nitrocellulose plastics	18,100,000	7,100,000
Other cellulosics	12,100,000	8,000,000
Phenolics	242,300,000	232,100,000
Urea and melamine*	58,200,000	112,000,000
Styrene and styrene derivative polymers and copolymers	66,800,000	203,000,000
Vinyl compounds†	167,000,000	360,000,000
Miscellaneous moulding‡	50,000,000	39,000,000
Miscellaneous for other purposes, except protective coatings	35,700,000	152,000,000§
Totals	753,200,000	1,189,200,000

*Urea and melamine moulding powder was included in miscellaneous moulding materials until 1949 when it was moved into the figures classified under ureas.

†Includes vinyl chloride, acetate, formal, alcohol, vinylidene chloride compounds.

‡Includes acrylic, polyethylene, nylon and other miscellaneous materials. No casein ncluded.

§This 1949 figure includes acrylic sheet, alkyd, coumarone indene, petroleum, silicone and other miscellaneous. About 70,000,000 lb. of it is coumarone indene and petroleum resins which were not included in the 1946 figures.

Production of the moulding and extrusion branch of the industry had increased more than fourfold since 1940, as shown in Table II.

The number and increasing size of injection presses and extruding machines sold in 1949 indicated that processors expected that branch of the industry to continue its expansion rate.

Phenolics.—Consumption and sales of phenolics rose rapidly to around 15,000,000 lb. monthly during the late fall months of 1949. One of the most obvious reasons for this increase was the moulding of larger pieces. Television cabinets were the most widely publicized of the new big pieces, but of the approximately 2,500,000 television sets produced in 1949, only a relatively small number were enclosed in phenolic cabinets.

Another possibility in developing increased use for phenolic moulding powder was in combination with rubber, although progress had been disappointingly slow. The largest volume of this material was in moulded shoe soles made from nitrile (Buna N) rubber and phenolic. GR-S and natural rubber were also used in combination with phenolic for the same purpose to produce a less costly but not quite so good sole. Another formula using 70 parts resin, 30 parts Buna N and 100 parts filler without any addition of sulphur, curing in 5 to 10 min., gave a material similar to ebonite, a natural rubber compound taking 30 to 60 min. to cure. Other compounds of the rubber-resin mixture were being used for the shanks of tools, connector plugs, grommets with undercuts and floor tile.

Table II.—*Production of Moulding and Extrusion Material in Pounds, Various Years, Compared with Sales in 1949*

(Includes filler)

	1940	1946	1947	1949
Phenolic	80,000,000	140,000,000	194,000,000	120,000,000
Urea and melamine	18,000,000	35,000,000	35,000,000	42,000,000
Thermosetting total	98,000,000	175,000,000	229,000,000	162,000,000
Acetate and butyrate	16,000,000	83,000,000	59,000,000	57,000,000
Other cellulose plastics	17,000	12,000,000	3,000,000	8,000,000
Polystyrene	1,800,000	67,000,000	95,000,000	178,000,000
Vinyl (includes saran)	1,000,000	62,000,000	73,000,000	82,000,000
Miscellaneous	1,500,000	15,000,000	26,000,000	39,000,000
Thermoplastic total	20,317,000	239,000,000	256,000,000	364,000,000
Totals	118,317,000	414,000,000	485,000,000	526,000,000

Source—U.S. census bureau; U.S. tariff commission; *Modern Plastics* estimates.

Vinyl.—Vinyl chloride and vinyl chloride copolymer resin compounds led all other plastics production with a 1949 volume in the neighbourhood of 300,000,000 lb., as compared with only 1,000,000 lb. in 1941.

The biggest outlet for vinyl in 1949 continued to be film for drapes and curtains, raincoats, shower curtains, tablecloths, chair cushions, aprons, nursery items and protective coverings for items ranging from typewriters to autos in transit to butcher aprons. Another fast-growing outlet was for inflatable products ranging from toys to mattresses.

The moulding and extrusion division of the vinyl industry in 1949 ran ahead of 1948 in volume, with wire and cable covering accounting for about 60% or 40,000,000 lb. out of a total of nearly 70,000,000. Next largest extruded product was garden hose, with about 50,000,000 ft. requiring about 6,000,000 lb. of resin.

Polystyrene.—Polystyrene moulding powder sales rose from 66,000,000 lb. in 1946 to nearly 180,000,000 lb. in 1949, and were nearly 20,000,000 lb. monthly in some of the later months of 1949.

New uses for styrene monomer were constantly being discovered (a new water paint was a good example) so that adequate supply was questionable. The limiting factor was benzol, with total production capacity of not much more than 170,000,000 gal. The uses for benzol were so varied and so great that a prolonged upsurge in demand for synthetic rubber, polystyrene, phenol or several other products of a benzenoid nature could create scarcities of serious dimensions.

The principal outlets for polystyrene moulded products remained about the same as in 1948: housewares and hardware, refrigerator and other industrial parts and toys.

Improved moulding technique provided only part of the explanation for the advances made by polystyrene. Without altering physical properties, producers were able to formulate better compounds by employing improved compounding methods and adding new types of lubricants. Higher heat resistance and greater clarity broadened the range of polystyrene applications. Better colouring methods plus the addition of metallic shades added to sales appeal.

Cellulosics.—Approximately 60,000,000 lb. of cellulose acetate were sold in 1949, as compared with the 80,000,000 lb. record for 1946. Flame-resistant acetate which, because of its high impact strength, was particularly adaptable for housings of electrical appliances came into wide use. Christmas tree light and ornament manufacturers adopted it as a safe material for their use. A higher heat-resistant acetate was developed which could withstand numerous boilings without undue distortion. Acetate also found increased use in toys, kitchenware, cutlery handles and toilet seats.

Cellulose acetate butyrate, propionate and ethyl cellulose did not show much change in 1949 over 1948.

Ethyl cellulose moulding powder continued to be used in specialty applications such as tool handles, toilet seats and vacuum cleaner parts.

Production of cellulose propionate, Forticel, remained small in 1949. So far, it had been used most widely for fountain pens

INFLATABLE PLASTIC BOATS, a vinylite novelty marketed in 1949

and telephone handsets and bases.

Cellulose acetate butyrate continued to be the most widely used of higher cost cellulosics. Extruded one-eighth-inch sheet moved more prominently into the field for spectacle frames and sun glasses, toys, soap boxes and other telescoping boxes and similar applications where stability was a prime requirement.

Urea and Melamine.—Consumption of melamine resin increased from 17,000,000 lb. in 1947 to 24,000,000 lb. in 1948, with a jump of unknown quantity in 1949; but since melamine moulding powder for dishware alone was used at a rate of several hundred thousand pounds in 1949, the increase was undoubtedly substantial. Urea moulding powder sales were about 35,000,000 lb. in 1949, a figure that had not changed much since the war. Buttons continued as the largest single outlet, about 30% of the total moulding powder volume. Urea closures and jar caps, particularly for cosmetics, were next largest.

There had been great improvement in urea moulding material. The improved powder was of more uniform bulk and granulation so that there was less scrap loss, fewer rejects and less difficulty in changing from batch to batch. Also, compounds had been developed to save up to 25% in curing time.

Urea and melamine glues declined in 1949, largely because of a decline in furniture production. Use of urea and melamine for paper and textile treatment continued to advance steadily.

Saran.—The biggest use of saran monofilament in 1949 was for woven automobile seat covers. Woven saran upholstery material was also under test as upholstery for seats in buses, railroad cars, original upholstery in passenger autos, public seating for both indoors and outdoors and home and hotel furniture. Other new uses, many of which were going through use tests, were bristles for brushes, radio grilles, women's shoe uppers, narrow webbing for furniture and belts, tobacco cloth, filter cloth and for mixing with other fibres to use in heavy drapes.

Polyethylene.—About 31,000,000 lb. of polyethylene were produced in 1949 and used in a variety of applications ranging from disposable baby bottles and lollipop sticks to heavy jacketing for telephone cable.

Electrical uses for polyethylene were still taking a large quantity of the output for such purposes as insulation in high-frequency wiring, coaxial cable spacers, lead-in wires, jacketing for telephone cable, oil burner and neon sign cables, an electrical tape for splicing and similar applications.

Acrylics.—Although there was considerable improvement in acrylic moulding powders and a reduction in prices there was no gain in over-all volume. The industry had developed three types of acrylic resin with varying properties to use where each was best fitted. First was a higher heat resistant material to withstand a heat distortion point of approximately 190° F. Next, a medium flow material with 174° F. heat distortion point and a soft flow material with a heat distortion point of 151° F. The third new addition to acrylics was red fluorescent material with decided improvement in resistance to fading and loss of fluorescence.

Chief outlet for acrylic moulding powder was still automotive parts—lenses, escutcheons, horn buttons and ornamentation. Moulded letters from two inches to two feet in height for outdoor signs were also thoroughly tested in 1949. Moulded boxes, containers, jewellery and cast display blocks containing embedments of all sorts continued to take the usual amount of acrylic.

Nylon.—Wire coated with nylon had innumerable uses, particularly because of the plastics' resistance to abrasion and fungus as well as heat resistance.

The use of nylon as a monofilament for brush bristles, fishing leaders and sutures was well established and growing. About 92% of all toothbrushes were now nylon bristle and practically all hairbrushes were nylon.

Nylon was widely used in 1949 for bearings or bushings because of its toughness, ability to operate without lubrication and resistance to corrosion. It was also being used in gears, bearings, shafts and cams and in office equipment. A precision instrument company was using nylon bushings in recording and controlling thermometers, pressure gauges, and the like. (*See* also MUNITIONS OF WAR; RAYON AND OTHER SYNTHETIC FIBRES; RUBBER.) (C. A. BN.)

Platinum: *see* MINERAL AND METAL PRODUCTION AND PRICES.
Plums: *see* FRUIT.
Plutonium: *see* ATOMIC ENERGY.

Pneumonia.

The year 1949 saw the introduction into general use in the United States of two new and highly effective antibiotics, aureomycin and chloromycetin. Staphylococci, which had become increasingly important as a cause of pneumonia, usually secondary to other types of infections of the lung, were found to be quite sensitive to penicillin during the first few years after that antibiotic became available. As the use of penicillin became widespread, however, increasing proportions of these staphylococci, both from pneumonias and from other sources, were found to be resistant to the action of penicillin. They also readily acquired resistance to the action of streptomycin.

Aureomycin proved to be more or less effective against almost all the bacteria affected by both penicillin and streptomycin, except that it is not nearly as effective as the latter against the causative organisms of tuberculosis. Aureomycin is also highly effective both in experimental animals and in human cases against infections with all of the known varieties of micro-organisms classified as rickettsiae. The most common of the diseases caused by the rickettsiae are the typhus fevers, Rocky Mountain spotted fever and Q fever. The latter is known to be an important cause of an influenzalike infection and a severe type of pneumonia, but any of the other rickettsial infections may be accompanied by extensive pneumonia, which may simulate other types of nonbacterial pneumonias and which reduce the chances of recovery from these infections. Both in experimental animals and in human cases of these rickettsial infections, treatment with aureomycin usually terminated the clinical course of the infections within a matter of 48 to 72 hours, and there were no deaths in adequately treated cases.

Still another group of infections against which aureomycin proved highly effective is caused by micro-organisms which previously had been included among the viruses but were later placed in a separate category. Psittacosis or parrot fever and the related infections sometimes referred to as "ornithosis" and which are acquired from other species of birds usually manifest themselves in the human being primarily as pneumonia. Such pneumonias were found susceptible to treatment with aureomycin.

Finally, the largest groups of cases encountered in schools, in colleges and among hospital personnel and possibly also among the general population are not caused by any of the agents mentioned and are usually referred to as "primary atypical pneumonias" or, loosely, as "virus pneumonias." The cause of these pneumonias had not yet been determined in 1949, but it was assumed to be a filtrable virus. The disease, which had been transmitted from human beings by means of bacteria-free filtrates of sputum from active cases, has a higher morbidity but lower mortality rate than any of the other types of pneumonia already mentioned. Reports from several large clinics in New York, Baltimore, Md., and Boston, Mass., indicated that it is quite promptly terminated by proper treatment with aureomycin. A controlled study carried out in an army hospital in California in which cases treated with aureomycin were alternated with similar cases treated with penicillin indicated that only the aureomycin had a specific effect in curtailing the disease.

Because of the favourable effect of aureomycin in Q fever, psittacosis and in the primary atypical pneumonias and particularly because the latter are generally referred to as "virus pneumonias" and the causative organisms of psittacosis and ornithosis are generally referred to as viruses, aureomycin was frequently considered by laymen in 1949 as being effective against virus diseases in general. Actually, aureomycin proved to be entirely without effect in infections with any of the well established viruses with which it had been possible to work in the laboratory, namely the viruses of encephalitis, mumps and smallpox. What is more important in relation to the pneumonias, aureomycin was found completely ineffective against the influenza virus, at least in experimental infections, and probably also in human infections caused by these viruses. The last statement requires some modification because in actual practice aureomycin proved to be effective in cases of pneumonia complicating influenza. Presumably it either prevented or terminated that aspect of the infection caused by the secondary bacterial invaders and which probably is responsible for the prolongation of the morbidity and for the great mortality of this disease.

Chloromycetin, although chemically distinct from aureomycin and derived from a different species of fungus, proved effective in test tube experiments against essentially the same range of bacteria and other micro-organisms that were affected by aureomycin. There are quantitative differences, however, and most of the bacterial incitants of pneumonia were found somewhat less sensitive to chloromycetin than to aureomycin. Like the latter, however, chloromycetin was highly effective against the various rickettsiae and against psittacosis infections. Clinical reports of the use of chloromycetin were as yet quite few in 1949, but they seemed to indicate that this agent too was effective against pneumonias caused by a large variety of infectious agents. Both of these agents have the common virtue that they are effective when given by mouth, and they are both free of any serious side effects.

Tests were carried out by United States public health service workers on the efficiency of various pasteurization methods in eliminating the Q fever rickettsiae from raw milk known to contain the infectious agent. So far as could be determined by the methods available, milk supplies pasteurized by the high temperature-fast time equipment were rendered free of infections although the same milk in the raw state was shown in each instance to be highly infectious (by guinea pig injections). Pasteurization by the method employing the holding vat without space heater was successful in eliminating rickettsiae from raw milk in only three of four experiments. In one of the four tests with this method, however, evidence of infection of the milk could still be demonstrated after the pasteurization. Of 20 guinea pigs injected with this pasteurized milk, 3 showed evidence of infection. In addition, 3 out of 32 specimens of milk from bottles of vat pasteurized market milk and 1 of 4 specimens of vat pasteurized market cream were found to be infected with Q fever, as shown by the guinea pig tests.

In the course of this study it was found that fresh milk was used without pasteurization in the preparation of butter, although the raw milk was known to contain living Q fever rickettsiae. Tests of the fresh milk, butter and buttermilk made from the infected raw milk all showed that the rickettsiae were still present and capable of infecting guinea pigs. Refrigerated butter was still infectious after 41 days.

In seeking out reservoirs of infection or other spontaneously occurring infections with the Q fever rickettsiae, various species of ticks had been found to harbour this organism. The latest discovery in this respect, of possible interest in the epidemiology of the human disease, was the finding of spontaneous infection of Q fever in some brown dog ticks of the species *Rhipicephalus sanguineus* collected in June 1948 from a dog in Phoenix, Ariz. This discovery was made by workers in the Rocky Mountain laboratory in Hamilton, Mont., where the American Q fever rickettsia was first discovered—also in ticks.

In northern California, human cases were found to be as frequently associated with sheep and goats as with cattle. Study of livestock, however, indicated that infection with Q fever rickettsiae in this region was much more prevalent in sheep (37.9%) and goats (43.6%) epidemiologically linked to human cases than the cattle similarly associated with human infections. Studies of the blood of the general sheep and cattle population, as sampled through animals received at slaughter houses indicated that the extent of infection in this group was small; 3.1% of the cows and calves and 3.5% of the sheep examined gave evidence of previous Q fever infection in their blood. The studies also indicated that sheep and possibly goats are epidemiologically related to human infections. This was further supported by the demonstration of rickettsiae in the milk of these species.

Just how the Q fever infection of man takes place was by no means certain in 1949, but an air-borne spread through dust contaminated with rickettsiae appeared to be the most likely method in certain of the outbreaks studied. In this connection, it was of interest that the Q fever rickettsiae had been recovered from the dust from sheep pens on a ranch where animals were known to be excreting organisms in the milk.

During 1949 Q fever was reported from new areas and under

EAST-WEST HIGHWAY connecting Warsaw with the suburb of Praga across he Vistula river; the road was officially opened in July 1949 and is viewed ere from the entrance to a tunnel forming part of the highway

ew circumstances. The wide distribution of this disease in urope, Africa, Australia and North America was demonstrated. reat Britain was one of the latest areas in which evidence of fever infection had been discovered. In the U.S., several cases f Q fever occurred among laundry employees who presumably cquired their disease from handling soiled towels and other tems from the Rocky Mountain laboratory. An outbreak was eported from Philadelphia, Pa., among workers who handled ool and animal hair in a dusty atmosphere. This was the first eport of Q fever acquired in the eastern United States.

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oetry: *see* American Literature; Book Publishing; Caadian Literature; English Literature; French Literature; Literary Prizes; Russian Literature; Spanish-Amercan Literature; Spanish Literature.

oland. A People's Republic of eastern Europe bounded on the east by the U.S.S.R., on the south by Czechoslovakia, on the west by Germany and on the north by the Baltic sea. Area: (before Sept. 1, 1939) 150,052 sq.mi., (after Aug. 2, 1945) 120,359 sq.mi.—a reduction by one-fifth, the result of the annexation of 68,667 sq.mi. by the U.S.S.R., and of the establishment of a new western frontier along the rivers Oder and Neisse which, together with the partition of East Prussia between Poland and the U.S.S.R., gave Poland an area of 38,974 sq.mi. Pop.: (before Sept. 1, 1939) 35,339,000, (Feb. 14, 1946, census) 23,929,757, (mid-1948, est.) 23,900,000. Chief towns (pop. Sept. 1, 1948, if not otherwise stated): Warsaw, the capital (Sept. 1, 1949) 630,024; Lodź (July 1, 1949) 615,000; Cracow 307,400; Wrocław 299,000; Poznan 297,000; Szczecin (July 1, 1949) 185,000; Gdańsk 164,000; Katowice 163,000. Language: almost exclusively Polish. Religion: overwhelmingly Roman Catholic. President of the republic, Bolesław Bierut; prime minister, Józef Cyrankiewicz.

History.—The year 1949 was marked by the fulfilment of the first three-year plan of economic rehabilitation. In a speech on Nov. 11 before the central committee of the United Workers' (Communist) party, Bolesław Bierut, its chairman, announced that if the 1938 production figures were taken as 100, the index numbers for 1949 were as follows: total value of industrial production 174, industrial output per head of the population 244. For agricultural production Bierut said only that between 1946 and 1949 crops had increased by 62% and livestock by 81%, which, however, when compared with 1938, would mean that crop production per head stood in 1949 at 115 and meat and dairy products at 105.

Bierut was, of course, comparing the production of two different areas. To obtain a clearer picture of Polish achievements in the field of economic rehabilitation it must be remembered that the territorial shift to the west on the whole considerably increased the country's industrial production capacity, except in regard to petroleum, of which three-fourths of the production was lost. In 1938 Poland mined more than 38,000,000 metric tons of bituminous coal; in the formerly German part of Silesia prewar production amounted to 31,000,000 tons; as the total Polish coal production in 1949 was estimated at 72,000,000 tons, the actual increase was 4%. The prewar production of steel was 1,400,000 tons in 1938; in the same year the recovered territories produced 900,000 tons; as Polish production in 1949 was estimated at over 2,200,000 tons the prewar level was reached. Another sign of increased industrial potentiality was the output of electric power: in 1938 Poland produced 3,977,000,000 kw.hr.; its loss in the east amounted to 211,000,000 kw.hr., its gain in the west to 2,609,000,000 kw.hr.; as the actual production in 1948 was 7,512,000,000 kw.hr. the increase achieved was more than 19%.

Agriculturally Poland had lost in the east rather poor areas, while in the west it gained highly developed agricultural lands. But by 1949 production was still lagging behind the 1934–38 averages, the total bread grain production being 79%, of oats 72%, potatoes 88% and sugar beets 90%. This is shown by the following table.

Poland's Agricultural Production
(In thousand metric tons)

	Prewar crops*	Losses in the east*	Gains in the west*	Total production in 1949	
				Possible	Estimated
Wheat	2,171.9	956.3	997.5	2,213.1	1,814.7
Barley	1,371.3	498.1	815.5	1,688.7	1,050.4
Rye	7,253.4	2,048.7	2,763.6	7,968.3	6,493.0
Oats	2,656.5	988.6	1,761.4	3,429.3	2,473.0
Potatoes	34,558.2	11,434.1	13,985.1	37,109.2	32,629.0
Sugar beets	3,162.4	420.9	2,010.2	4,751.7	4,226.4

*Annual averages for 1934–38.

In the new six-year plan starting in 1950 Poland was expected to reach by 1955 a production of 90,000,000 tons of coal, 7,000,000 tons of steel (a threefold expansion in comparison with 1938), 23,500,000,000 kw.hr. of electric power (almost four times as much as in 1938). By 1955 Polish industry was to produce annually 12,000 tractors and 18,000 motor vehicles, but plans for consumption goods were on a more modest scale: the 1955 targets for cotton and wool yarn were 137,300 and 49,500 metric tons respectively, which meant only a 77% increase for cotton and 45% for wool. It was not expected that the agricultural output in 1955 would exceed the 1938 levels (described as possible in the table). If collectivization were forcibly introduced not only the 1938 levels would not be reached by 1955, but there would be a decrease from the 1949 production volume. This probably explains why by 1949 there were only 170 collective farms covering less than 1% of the arable land. Collectivization, therefore, was postponed and for the time being the Communists were cautious with the peasants.

The Moscow policy, adopted in 1944, of appointing soviet officers to all key posts in the army of the strategically most important European satellite state was crowned in 1949 when the soviet government put at the disposal of Poland Marshal Konstantin Rokossovsky (thenceforward Konstanty Rokosowski). On Nov. 7 he was accorded by decree Polish citizenship and rank of marshal in the Polish army and was appointed minister of national defense and commander in chief of the Polish forces in succession to Marshal Michał Rola Zymierski. With Rokosowski's appointment all important army posts were in the hands of officers who had made their military career exclusively in the soviet army, although some were of Polish descent. The Polish army was believed to consist of 6 army corps, 16 infantry divisions, 5 artillery brigades, 10 armoured regiments, 5 pioneer regiments and 6 signal regiments, totalling in all 250,000 men. There were also 11 brigades of Frontier Guard troops and 18 regiments of Home Security corps under the command of Stanisław Radkiewicz, minister of public security.

On Nov. 14 it was announced that Rokosowski had been coopted as a member of the central committee of the Communist party and that Władyslaw Gomułka, Marian Spychalski and Zenen Kliszko were expelled from the central committee and forbidden to be in charge of any state or party office. In Nov. 1949 an article by Edward Ochab in the Communist monthly *Nowe Drogi* (New Ways) accused Gomułka of "building a wall of mistrust between Poland and the Soviet Union." Spychalski, former deputy minister of national defense, and Kliszko, former chairman of the parliamentary group of the Communist party, both friends of Gomułka, were accused of enabling enemy agencies to secure responsible posts and act against the People's democracy. Among many high officials arrested was Józef Dubiel, former deputy minister of recovered territories and another friend of Gomułka. According to Bierut himself, Dubiel had already confessed to having been a Gestapo agent during World War II.

Education.—(1949) Schools: kindergarten 5,239, pupils 240,839; elementary 22,133, pupils 3,241,046; secondary, lower grade 335, pupils 197,110, higher grade 486, pupils 140,893; secondary vocational 1,131, pupils 183,440; teachers' colleges 149, students 31,000; universities (8), technical colleges (5) and other schools of higher education (14) had 92,444 students. Illiteracy (mid-1949 est.): 1,100,000.

Finance and Banking.—Budget (1949 est.): revenue and expenditure balanced at 612,058,000,000 zlotys. Currency circulation (Dec. 1948, last figure published): 128,800,000,000 zlotys. Deposit money (Dec. 1948): 150,300,000,000 zlotys. Monetary unit: zloty. Exchange rate: U.S. dollar, official, $1=100 zlotys, premium $1=400 zlotys.

Foreign Trade.—Value (official estimates published in Warsaw in U.S. dollars, 1948): imports $509,000,000, exports $528,700,000. Weight (in metric tons, 1948): imports 4,431,900, exports 32,094,300 including coal 24,752,500.

Transport and Communications.—Railways (Jan. 1948): 21,415 km.; freight traffic (in metric tons-km., 1948): 28,188,000,000; passenger traffic (in passenger-km., 1948): 19,848,000,000. Roads (April 1947): 96,605 km.; licensed motor vehicles (April 1948): cars 24,240, trucks 28,957, motorcycles 24,561. Shipping (May 1949): merchant vessels 46, total tonnage 164,989 gross registered tons. Freight traffic in Polish ports: (1948, total imports and exports) Gdansk-Gdynia 12,700,000 metric tons, Szczecin 3,200,000 metric tons. Telephones (Jan. 1948): subscribers 137,400. Radio receiving set licences (July 1949): 1,054,551 including 335,489 home loud-speakers.

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Pole Vaulting: *see* TRACK AND FIELD SPORTS.

Police.

One of the indices of the gradual return of western Europe to civil policing was the restoration of the International Criminal Police commission to full operating status from a Paris headquarters. This representative police agency had been based in Vienna prior to and during World War II, and hence had been "captured" by Adolf Hitler's police agents at the time of the German *Anschluss*.

Most important single police event in Great Britain was the inauguration of the police college at Ryton-on-Dunsmore, to which all forces might send students (total enrolment 225) from the intermediate ranks. Operating under the joint control of the home office and local police authorities, the police college aimed to improve the fitness of its students to hold higher rank. Students were nominated by local authorities from among those who had already given evidence of ability to rise in the service. The established standards and procedures of promotion were in no way affected by this major departure in police training.

Less satisfactory was the outlook for the general police service in England and Wales. While losses through resignations during the early years of police service had always occurred, usually at the rate of 10% or 12% of the total recruited, the postwar losses of police manpower had ranged between 25% and 50%. With total police strength at a low point, this impaired capability to hold recruits after schooling and indoctrination suggested the need for vigorous action in restoring the attractions of police service.

Also causing police concern was the continuing rise in crime, which in the words of an official agency had "touched the conscience of the nation."

Under the Police acts of 1946, 11 Scottish county constabu-

Table I.—*Numerical Strength of U.S. Municipal Police Forces*

(Number per 1,000 inhabitants)

Population groups of cities	1949	1948	1939
Group I—Over 250,000	2.41	2.33	2.19
Group II—100,000 to 250,000	1.73	1.67	1.47
Group III—50,000 to 100,000	1.71	1.65	1.36
Group IV—25,000 to 50,000	1.56	1.50	1.21
Group V—10,000 to 25,000	1.44	1.37	1.08
Group VI—Less than 10,000	1.35	1.29	1.11
Average police employees per 1,000 inhabitants	1.89	1.83	1.65

laries were combined in 1948–49 to form three new forces, with other changes of similar character impending. Similarly three county forces in Wales were amalgamated while one county borough in England set up its own police establishment separately from the county constabulary by which it previously had been served.

Police developments in the United States continued along lines of more manpower and more equipment. Numerical strength of police forces rose to the highest level in the nation's history, and this, combined with rising salary scales and pension costs, was reflected in total police expenditures without parallel.

Municipal police killed in line of duty in the United States totalled 64 in 1948, a slight decline from 1947 levels. Highest police fatality rates were in the west south central and south Atlantic regions, with New England cities showing rates less than one-tenth as high.

As measured by percentage of known offenses for which someone was arrested and charged, 1948 projected still further the slow but steady rise in municipal-police effectiveness during the past two decades. Yet the hard fact remained that levels of performance were less satisfactory for manslaughter and burglary than they had been in 1941, when the numerical strength of municipal police was about 10% lower.

Table II.—*Per Cent of Crimes Cleared by Arrest in U.S. Cities*

Uniform Crime Classification	1948	1947
Murder and nonnegligent manslaughter	90.9	88.1
Manslaughter by negligence	84.1	85.5
Rape	79.0	76.5
Robbery	41.8	41.1
Aggravated assault	79.2	79.6
Burglary	29.7	29.2
Larceny	22.7	22.4
Auto theft	27.3	29.2

The number of males arrested, charged and fingerprinted increased by 6.1% during the first half of 1949, as compared with a 3.5% increase for females. Persons under 21 years of age represented 15.3% of the total fingerprinted, but this did not reflect the full extent of youthful criminality because of widely varying policies in fingerprinting young persons. Out of the nation's total of fingerprinted offenders, 59.4% were identified by the national identification division of the FBI as having been arrested previously. In effect, about 250,000 persons fell into this repeater category in 1949 alone. Members of the white race constituted three-fourths of all persons fingerprinted by police, the rest consisting almost entirely of Negroes.

The International Association of Chiefs of Police held its annual congress in Dallas, Texas, during the second week of Sept. 1949. About 1,000 police administrators, most of whom represented U.S. and Canadian police forces, were in attendance. (*See* also CRIMES; FEDERAL BUREAU OF INVESTIGATION; SECRET SERVICE, U.S.)

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(BR. S.)

Poliomyelitis: *see* INFANTILE PARALYSIS.

Political Parties: *see* COMMUNISM; DEMOCRATIC PARTY; ELECTIONS; POLITICAL PARTIES, BRITISH; REPUBLICAN PARTY; SOCIALISM; also under individual countries.

Political Parties, British.

Parliamentary by-elections and local elections during 1949 supplied both the main parties with ample material for optimistic speculation about the result of the next general election, but no conclusive evidence of a sweeping change in public opinion. The six parliamentary seats contested between January and December were all held by the Labour party though with reduced majorities. In the county council elections in April the Labour party lost over 350 seats and the Conservatives gained correspondingly. Over 800 Labour seats were lost, mainly to the Conservatives, in the borough elections in May. Conservative satisfaction was tempered, however, by the knowledge that government supporters seldom turn out in full force at local elections. At Westminster the Labour party seemed more secure than ever, at least until the announcement of devaluation in September. The prime minister, Clement Attlee (*q.v.*), though constantly expected to reshuffle his cabinet, did not do so.

Thus fortified against opposition from within, the government carried out its legislative program with what seemed to its supporters a splendid steadfastness and to its opponents a remarkable indifference to the actual state of the country. The timetable, which had been carefully worked out, provided for the passage of the Parliament bill, reducing the delaying powers of the house of lords to one year, and the bill for the nationalization of iron and steel, by the end of 1949. According to the opposition, and to most independent observers, the object of the Parliament bill, which was to operate retroactively, was to enable the Iron and Steel Nationalization bill to become law in spite of the opposition of the upper house before the general election of 1950. The better part of two years had been expended on the ceremony of presenting these bills to the lords and laboriously repeating the arguments for and against them, and the process had almost reached its foreordained conclusion when the government announced that it had decided to introduce an amendment which would have the effect of postponing the application of the Iron and Steel Nationalization bill until after the general election. This met the requirements of the opposition and the house of lords fully and had indeed already been proposed by them.

The Labour Party.—Meantime, preparations for the general election continued. The government, like all parties which have successfully accomplished a revolution, was faced with the problem of what to do next. Some favoured a policy of safety first and the consolidation of gains already made. Others, notably a section of the rank and file of the trade union movement, wished to move from public ownership to workers' control and had begun to murmur that centralized bureaucracy was only one degree better than capitalist exploitation. Finally, convinced doctrinaires wished to continue nationalizing industries and differed about the point at which the process should stop. The party's program, embodied in a pamphlet entitled *Labour Believes in Britain*, attempted a compromise between these views. Industrial insurance, the cement industry, sugar refining, the wholesale meat trade, slaughter-houses, cold storage, water supply and what were comprehensively described as "all suitable minerals" were to be brought under public ownership. The chemical industry would be considered for nationalization. Shipbuilding and repairing would be dealt with by the appointment of a development council; and land would be acquired by the state, as indeed it always had been, when the public interest was deemed to necessitate it.

At a conference at Blackpool in June this program was approved by an overwhelming majority. A similar and even more striking success was achieved at the Trades Union congress conference in early September, when the government's demand for restraint on wage claims was approved by a majority of 6,500,000 to 1,000,000. After the devaluation of the pound the government was forced to make cuts in public expenditure which the opposition condemned as inadequate and Labour supporters accepted loyally but reluctantly. More serious still, it had to intensify its campaign for the freezing of wages. Here it was able to report considerable success by the end of the year. Faced by the financial and economic crisis, the government still declined to make any fundamental change in its domestic policy.

The Conservative Party.—The preparations of the Conservative party were hastened by a rumour which became current in the summer that the prime minister would appeal to the country in the autumn. The party was united in demanding a reduction of public expenditure, the restoration of incentives to production and the abolition of vexatious controls. Within this framework, however, there was much room for disagreement. Some members appeared to favour a policy of wholesale denationalization, accompanied by rigorous disinflation and the nearest possible return at home and abroad to the conditions of a free economy. Others held that the first duty of a government was to maintain a minimum standard of living, that the social services were sacrosanct and that economies could only be effected within the limits set by these conditions. Nationalization could not be wiped out, though its extension must be resisted and some attractive alternative to it found. In imperial and foreign policy, divisions also appeared. A group of members, under the patronage of Winston Churchill (*q.v.*), looked with disfavour on changes in the structure of the commonwealth designed to enable it to retain members who repudiated their allegiance to the crown; while at the same time many of them, including Churchill, crusaded passionately for a customs union with western Europe and the merging of Great Britain in some kind of western European union. (*See* EUROPEAN UNION.) Others felt that these two policies were incompatible.

After much deliberation the policies and principles of the party were set out in a pamphlet entitled *The Right Road for Britain.* The party decided against general denationalization but put forward practical proposals for improving the efficiency of the nationalized industries by decentralization. It demanded drastic reductions in public expenditure, combined with the full maintenance and some extension of the social services, and a vigorous defense policy. It thus seemed to rely entirely on the elimination of wasteful administration as a means of saving money. The alternative to nationalization was provided by the reaffirmation of the Conservative *Industrial Charter,* which set profit sharing and joint consultation as the ideals of British industry and committed the party, if returned to power, to encouraging their adoption by practical means. The program contrasted the centralized Socialist state administered from Whitehall with the Conservative ideal of a property-owning democracy in which every man would take an active part in the affairs which touched him most closely. To this end local government would be given increased powers and duties; and corporate and voluntary activity within the state would be encouraged. This program was enthusiastically approved at the party conference in London in October. As the weeks passed, however, party spokesmen insisted increasingly not on their long-term program but on the immediate crisis and the superior ability of a Conservative government to cope with it.

The Liberal Party.—The Liberal party, at its conference at Hastings in March, approved the executive's intention to put 600 candidates up at the general election and rejoiced at having already induced 300 to stand. Its program was approved by a large majority, and a new proposal for a flat rate of income tax on all incomes below £500 a year took its place beside federal union, proportional representation and free trade in the party's platform. A bitter controversy in which accusations of Communist and fascist tendencies were freely exchanged arose out of a proposal to cut out the compulsory clause in the scheme for profit sharing and joint control which the Liberals intended to apply to a great part of British industry in the event of their being returned to power. The supporters of compulsion pointed out that in addition to its other merits it was the only aspect of the scheme which distinguished it from the Conservative *Industrial Charter,* and the clause was approved amid scenes of considerable enthusiasm. Throughout the year Liberals continued to protest against any proposal for an electoral truce with the Tories.

The Communists.—The Communist party of Great Britain, assembled at Liverpool in November, demanded the reversal of all policies favoured by all other parties, calling for higher wages, more public expenditure, nonintervention in eastern Europe and the erection of a phenomenal number of houses in a phenomenally short time.

Sir Oswald Mosley's Union movement, which was widely regarded as a reincarnation of the Fascist party, maintained silence throughout the year, although there was some activity among local branches. (T. E. U.)

Polo.

Polo during 1949 possessed international style and quality of play which had been absent since the cessation of play during the war. Argentina sent two teams to the United States. The Venado Tuerto four visited the Pacific coast in the spring where they completed a successful tour against the best players in the west. The only game they lost was to a strong Hurricane team in the Pacific Open championship tournament. A second Argentine team, El Trebol (the clover) arrived in May and played in all the eastern tournaments through September. The team of Juan Reynal, Julio and Carlos Menditeguy and Horatio Castilla won their first six matches including the Inter-America cup in Chicago. They too succumbed to the Hurricane four in the final game of the National Open championship on International field in Westbury, L.I.

ERIC PEDLEY (1) of the U.S. polo team attempting a goal during the first of a series of matches between U.S. and Argentine players at Los Angeles, Calif., in April 1949. The Argentines won the international series 2 to 1

The outstanding team of the 1949 season was the Hurricanes, who captured the Pacific Open, the National Open for the second year in succession and the Monty Waterbury Memorial tournament for the third consecutive year. The line-up included Larry Sheerin, veteran Stephen "Laddie" Sanford, ten-goal Cecil Smith and Roberto Cavanagh of Venado Tuerto fame. Cavanagh was one of the best players in the Argentine and was invited to play with the U.S. champions by Laddie Sanford after their earlier meeting on the west coast.

The university of Miami, Coral Gables, Fla., team won the intercollegiate crown after completing an undefeated season and running its victory streak to 22 games over a two-year period over such opponents as Stanford, Princeton and Yale. Cornell was the outstanding team in the east. (W. Cn.)

Popular Music: *see* Music.
Population, Movements of: *see* Refugees.
Populations of the Countries of the World: *see* Areas and Populations of the Countries of the World.
Porto Rico: *see* Puerto Rico.

Portugal. A republic of western Europe, Portugal forms part of the Iberian peninsula, and is bounded on the east and on the north by Spain. Area: 35,413 sq.mi., including Azores (888 sq.mi.) and Madeira (302 sq.mi.). Pop. (1940 census): 7,722,152; (mid-1948 est.) 8,402,000, including Azores (1940 census: 286,885) and Madeira (250,124). Chief cities (pop., 1940 census): Lisbon (cap., 709,179); Oporto (262,309); Funchal (54,856); Coimbra (35,437). Language: Portuguese. Religion: predominantly Roman Catholic. President: Marshal Antonio Oscar de Fragoso Carmona; prime minister: Antonio de Oliveira Salazar.

History.—After a heated electoral campaign, with threats of army intervention, Gen. José Norton de Mattos withdrew and on Feb. 13, 1949, Marshal Carmona was re-elected president for a fourth seven-year term. At elections for the national assembly on Nov. 13, the União Nacional (pro-government) party was again returned, with negligible opposition. About half of its candidates were civil servants. The new assembly could initiate revision of the 1933 constitution. The archives of the illegal Communist party were seized in Luso in March and its secretary-general, a lawyer, was arrested. In June a public security council was established to tighten preventive and repressive measures against subversive activities.

Features of the 1949 budget, which estimated receipts at 4,309,000,000 escudos, ordinary expenditure at 4,308,000,000 escudos and extraordinary at 1,358,000,000 escudos, were the provision of 317,000,000 escudos for increases in civil service salaries and a cut in public works in favour of development in Mozambique. It was announced in May that Portugal had forgone, in favour of other O.E.E.C. (Organization for European Economic Cooperation) countries, any claim to U.S. financial assistance.

A European regional conference of F.A.O. (Food and Agriculture organization of the U.N.) was held in Lisbon in March, and in April the 16th International Geographical conference. The exchange of diplomatic missions with Pakistan with the rank of legations was agreed on in September.

Following consultations with Spain, Portugal adhered to the North Atlantic treaty (*q.v.*) in April, with the reserve that no use of bases would be granted in time of peace. Salazar stated that the value and significance of Portugal's adherence would be affected by the inclusion or exclusion of Spain. The close understanding with Spain was underlined by the five-day visit to Portugal of Gen. Francisco Franco (*q.v.*) in October.

CAMPAIGN POSTERS for Gen. Jose Norton de Matos being torn down in Lisbon, Port., after he withdrew as presidential candidate on Feb. 11, 1949. Pres. Carmona was then re-elected on Feb. 13 without opposition

The Anglo-Portuguese monetary agreement was extended in April for a year. Great Britain continued to be Portugal's chief supplier and, after the Portuguese colonies, its best customer. A fall in imports from Great Britain was envisaged in a new trade program aiming at approximate equilibrium in payments between the two areas. A one-year trade agreement was signed with France in October, totalling 600,000,000 escudos in each direction. Duties on all imports from abroad, certain agricultural chemicals and food excepted, were increased in June by 60%. In September a fund was created to stimulate exports.

Heavy rainstorms in September ended the longest drought in the country's history, which had severely hit the cotton and woollen industries through cuts in hydroelectric power. Much wheat also had to be imported. A vast reconstruction plan for the centre of Lisbon was approved. Antonio Egas Moniz (*q.v.*), the Lisbon neurologist, shared with a Swiss physiologist the Nobel prize for physiology and medicine. (W. C. An.)

Education.—(1946–47) Primary schools: 10,248, pupils 533,344, teachers 13,747; private elementary schools: pupils 59,698; secondary schools (*liceus*): 43, pupils 20,965, teachers 1,154; private secondary schools: pupils 24,800; technical secondary schools: 58, pupils 39,521, teachers 1,481; commercial schools: 8, pupils 3,150, teachers 204; universities: 3, students 8,568, professors and lecturers 464; institutions of higher education: 3, students 5,846, professors and lecturers 281. Illiteracy (1940) 49%.

Finance and Banking.—Budget: revenue (1950 est.) 5,271,500,000 escudos, expenditure 5,268,300,000 escudos. National debt (1947): internal 10,621,000,000 escudos, external 3,101,000,000 escudos. Currency circulation (Sept. 1949): 7,850,000,000 escudos; (Sept. 1948) 8,170,000,000 escudos. Gold reserve (March, 1949) U.S. $146,000,000; (March 1948) U.S. $184,000,000. Bank deposits (July 1949) 17,230,000,000 escudos; (July 1948) 17,830,000,000 escudos. Monetary unit: escudo. On Sept. 22, 1949, the exchange rate of 28.9 escudos per U.S. dollar was established.

Foreign Trade.—Imports: (1948) 10,351,000,000 escudos; exports: (1948) 4,295,000,000 escudos.

Transport and Communications.—Roads (1947): 16,080 mi. Licensed motor vehicles (Dec. 1948): cars 51,700, commercial vehicles 21,200. Railways (1947): 2,240 mi.; passenger traffic 47,023,722 metric tons; freight traffic 5,210,802 metric tons. Shipping (July 1948): number of merchant vessels of 100 tons and upward 320, total tonnage 471,438. Telephones (1948): 114,818. Radio receiving set licences (1948): 974,192.

Agriculture and Fisheries.—Main crops (in metric tons, 1948): wheat 322,000; barley 88,000; oats 99,000; maize 317,000; rye 131,000;

potatoes 994,000; rice 89,000; dry beans 40,000. Livestock: cattle (Dec. 1945) 950,000; sheep (Dec. 1947) 4,000,000. Fisheries total catch (1948): weight 180,606 metric tons; value 669,000,000 escudos. Production (1948): meat (in metric tons) 70,800; milk (in metric tons) 330,000; olive oil 315,930 hectolitres; wine 8,162,000 hectolitres.

Industry.—Fuel and power (in metric tons, 1948): coal 386,000; lignite (in metric tons) 103,000; manufactured gas 1,234,000 cu.ft.; electricity 805,000,000 kw.hr. Raw materials (in metric tons, 1948): lead 1,650; tin content of cassiterite 710; iron pyrites 556,135; wolfram 2,511; antimony 84; sulphur 9,826; manganese 280; chromium 170; baryta 396; sulphur pyrites 9,826; cork 140,442. Manufactured goods (in metric tons, 1948): cotton yarn 31,486; cotton piecegoods 24,452; refined sugar 63,896; sulphuric acid 200,069; superphosphates 302,845; cement 500,000.

FILMS OF 1949.—*Iberian Peninsula* (Encyclopædia Britannica Films Inc.).

Portuguese Colonial Empire.

Under this heading are grouped the Portuguese possessions in Africa and Asia. Total area (approx.): 803,835 sq.mi.; total population (mid-1948 est.): 12,998,000. Certain essential facts and figures relating to the Portuguese colonies are given in the accompanying table.

History.—In July 1949 the Indian Congress party president, echoing Pandit Jawaharlal Nehru's statement of Nov. 12, 1948, declared that neither the French nor the Portuguese possessions in India could have a separate existence from the Indian union. A conference held at Belgaum, India, had earlier demanded the accession of Gôa to the union. (Portuguese India had been given in Dec. 1946 the status of a metropolitan province.)

The garrison at Macao was reinforced in August from Portugal and Portuguese Africa to a total of about 6,000. In November, as the Chinese nationalists withdrew from the neighbourhood, many stragglers and a number of nationalist gunboats and armed junks sought refuge in Macao, drawing some Communist shelling.

On Jan. 1 the Portuguese government redeemed the Beira (Mozambique) concession, and port and railway passed to the Mozambique colonial administration. An international conference of African transport, covering railways, inland waterways, roads and ports, met in Lisbon, Port., in May with a view to the co-ordination of developments throughout the territories of central and southern Africa. A plenary conference in Africa was to follow. Coal deposits believed sufficient to supply the whole Portuguese empire were discovered at Maniamba, Mozambique.

Considerable developments in public works were recorded in the African colonies (and in Timor) and, taken in conjunction with the provision of government-paid passages for emigrants and their families going to guaranteed employment, were reflected in substantial increase in emigration from Portugal.

The minister for colonies reaffirmed in February that Portuguese policy continued firmly opposed to the modern trend toward autonomy and eventual independence for colonial territories.

(W. C. AN.; X.)

Post Office.

United States.—Revenues of the post office department for the fiscal year 1948–49 amounted to $1,571,851,202.12. Estimated postage that would have been collected if the service had been on a regular pay basis in the case of penalty and franked mail, free-in-county mail, differentials in second-class mail matter and free matter for the blind and the cost of aircraft service over the postage revenue derived from air mail amounted to $120,118,663.

The expenditures of the department for the fiscal year amounted to $2,149,322,128.38, of which amount $147,013,101.84 was on account of prior years. There was $120,671,703.36

Portuguese Colonial Empire

Country and Area (In sq.mi.)	Population Est. 1948; percentages as of 1940 (000's omitted)	Capital, Status, Governor	Principal Products Exports—1947 (In metric tons)	Imports and Exports (In thousand escudos)	Road, Rail and Shipping	Revenue and Expenditure (In thousand escudos)
AFRICA						
Angola (Portuguese West Africa) 481,351	4,595 (Europeans 1.2%; Negroes 98.7%)	São Paulo de Luanda (pop. 40,000); colony; *governor-general:* Capt. Silva Carvalho	maize 44,700 coffee 44,000 cane sugar 35,200 coconuts 13,900 palm oil 12,400 sisal 10,500 diamonds (carats) 802,000	(1947) imp. 962,074 exp. 981,012	(1946) rds. 21,949 mi. rly. 2,363 km. shpg. ships entered 3,018 cargo loaded 619,869 tons cargo unloaded 220,886 tons	(1946, actual) rev. 525,872 exp. 482,173 (1949, est.) balanced at 644,169
Cape Verde Is. 1,557	161 (Europeans 3%; Half-castes 65%; Negroes 32%)	Praia (pop. 6,000); colony; *governor:* Major Alberto Alvez Roçadas	(1947, eight months) mineral oil 160,862 copra 1,008 coffee 47 castor oil 34	1947 imp. 223,429 exp. 205,895	rds. 544 km. shpg. (entered) vessels 4,593 net tonnage 3,095,390	(1944, actual) rev. 24,687 exp. 22,249
Portuguese Guinea 13,948	431 (Europeans 0.4%; Negroes 98.9%)	Bissau; colony; *governor:* Raimundo Serrão	peanuts 66,045 coconuts 27,884 palm kernel oil 5,188 rice 4,414	(1947) imp. 145,303 exp. 1·20,472	rds. 2,705 km. shpg. (entered) vessels 65 net tonnage 91,128	(1946, actual) rev. 40,629 exp. 37,956
São Tomé and Principe Is. 372	57 (Europeans 2%; Negroes 94%)	São Tomé (pop. 3,187); colony; *governor:* Maj. Carlos de Sousa Gorgulho	cocoa 8,393 coffee 440 coconuts 4,927 copra 4,118	(1947) imp. 79,949 exp. 222,393	rds. 327 km. shpg. (entered) vessels 1,411 net tonnage 372,291	(1947, actual) rev. 40,612 exp. 24,179
Mozambique (Portuguese East Africa) 297,731	6,258 (Europeans 0.5%; Negroes 99%)	Lourenço Marques (pop. 48,000); colony; *governor-general:* Commander Gabriel Mauricio Teixeira	sugar (raw) 76,328 copra 47,231 peanuts 16,599 timber 80,529	(1946) imp. 1,127,101 exp. 966,421	rds. 28,913 km. rly. 2,298 km. shpg. (entered, 1944) vessels 931 net tonnage 3,865,389	(1946, actual) rev. 892,904 exp. 839,871 (1949, est.) balanced at 985,946
ASIA						
Portuguese India 1,538	667	Nova Gôa; metropolitan province; *governor general:* Commander Fernando Quintanilha de Mendonça Dias	fish, spices, coconuts, copra and salt	(1945) imp. 224,052 exp. 67,874	rds. 702 km. rly. 80 km. shpg. (entered, 1940) net tonnage 221,822	(1946, est.) rev. 48,005 exp. 48,005
Macao 6.2	389 (Europeans 0.5%; Asiatics 98.6%)	Macao; colony; *governor:* Commander Albana Rodriguez de Oliveira	fish preserves and cement	(1936, in thousand patacas†) imp. 15,724 exp. 9,144	rds. 19 km. shpg. (entered, 1938) net tonnage 3,116,410	(1946, est.†) rev. 60,766 exp. 60,766
Timor 7,332	440*	Dilli (pop. 7,000); colony; *governor:* Capt. Oscar Freire Vasconcellos Ruas	coffee, sandalwood, wax and copra	(1940, in thousand patacas†) imp. 3,880 exp. 4,154	rds. 1,039 mi. shpg. (entered, 1939) net tonnage 91,215	(1946, est.†) rev. 9,430 exp. 9,430

*Native population only.

†Pataca = 16.07 escudos.

unpaid on account of the 1949 fiscal year. This left a total expense of $2,122,980,729.90, resulting in a gross operating deficit on an accrual of $551,129,527.78. This amount did not include pending retroactive payments to railroads, but did include a 25% interim increase granted participating railroads by the Interstate Commerce commission. It also included the estimated increased cost for pending establishment of permanent rates on air mail routes by the Civil Aeronautics board.

The tremendous increase in the volume of mail handled by the post office department for other branches of the government had been a matter of concern to congress and the department for a number of years. Thousands of tons of forms, pamphlets, circulars and supplies were sent by government departments and establishments free of postage under the penalty privilege.

Congress passed an amendment to the penalty mail law providing that all envelopes, wrappers, cards and other articles bearing the indicia for matter mailed free of postage by all government departments and agencies should be procured or accounted for through the postmaster general. During the fiscal year ended June 30, 1949, 1,470,000,000 free pieces weighing 177,000,000 lb. were mailed for other government departments—an increase of 52,000,000 pieces but a decrease of 2,500,000 lb. from the fiscal year 1948.

On June 30, 1948, war savings stamps were on sale at 41,607 offices. Sales from July 1, 1948, to June 30, 1949, amounted to $15,067,254.50. During the fiscal year 6,459,306 savings bonds with a sale value of $368,181,468.75 were sold. At the close of 1948, bonds were on sale at 26,503 post offices.

Through the 41,607 post offices and 3,724 stations being conducted under contract agreement, as well as 2,083 stations and branches, there were received, transported and delivered 43,380,000,000 pieces of mail matter during the fiscal year having a weight of 11,623,000,000 lb., an increase of 3,000,000,000 pieces and 1,300,000,000 lb. from the previous fiscal year.

Delivery service was established in 143 additional cities during the fiscal year, thereby increasing to 4,413 the number of cities in which this service was operated.

During 1949 it was impossible to deliver 18,142,721 letters—an increase of 23% from the previous year. A total of 4,075,970 were returned to the senders. Letters containing valuable enclosures numbered 374,234, of which 102,442 contained money amounting to $209,272.18. There were also 718,156 unclaimed parcels and articles found loose in the mails. A total of 592,944 were returned to the senders. The remaining 125,212 parcels were sold at public auction and $135,532.56 was realized.

On June 30, 1949, there were 155,314 mi. of domestic air mail routes in the United States—an increase of 25,221 mi. over June 30, 1948. Three new domestic air mail routes were established. The domestic air mail rate was raised to six cents, effective in Jan. 1949. A four cent air mail postal card was authorized for the first time in that year. Foreign air parcel post was inaugurated on March 15, 1948, and domestic air parcel post on Sept. 1.

Rural Delivery.—The rural delivery routes in operation on June 30, 1949, required a total daily travel of 1,480,710 mi. by rural carriers in providing service to approximately 30,120,663 patrons. Operation of the service resulted in an expenditure of $152,800,000 for the fiscal year compared with $132,159,009 for the previous year. Amounts saved through consolidation of routes were utilized to establish new routes and provide extension of existing routes.

Postal Savings.—Postal savings depositors numbered 3,964,509 for 1949—a decrease of 3.6% from the preceding year. The balance due depositors by outstanding certificates of deposits was $3,277,173,306—a decrease of $101,797,489 or 3%. In addition there was held in trust for depositors accrued interest of $113,251,238 and unclaimed deposits of $228,964, making a total of $3,390,653,508. At the end of the fiscal year, postal savings certificates were on sale at 8,195 depositories, including 982 branches and stations, and savings stamps were on sale at all post offices and practically all branches and stations.

HIGHWAY POST-OFFICE COACH built for the U.S. postal department in 1949 by the Twin Coach Co. of Kent, O. It was designed for economical handling of large quantities of mail on routes not served as efficiently by smaller size units

Buildings.—During the fiscal year ended June 30, 1949, the post office department operated 3,262 government-owned buildings. No new buildings were completed during this period.

(I. Gg.)

Canada.—Revenues for the 1948–49 fiscal year showed an increase of $4,343,850 to $95,957,468, highest in Canadian postal history. There were 12,000 post offices in operation with 42,000 employees. Money order and postal note business was the highest on record: 28,851,065 transactions, totalling $415,703,754. During 1949 new stamps issued included: commemorative four-centers, (1) entry of Newfoundland into Canadian confederation, (2) Halifax centennial, (3) Princess Elizabeth's marriage; regular series, new King George VI issue for one-cent, two-cent, three-cent, four-cent and five-cent stamps, showing his majesty in civilian clothes. "All-Up" service—carrying of ordinary mail by air—was further expanded to include Newfoundland. Direct air mail service, on the 20th anniversary of Canadian air mail, was established to Bermuda and Trinidad, to Australasia and the orient. Rates on gift parcels for the United Kingdom were substantially reduced to encourage flow of food packages to lighten British austerity. (C. Cy.)

Great Britain.—The total value of post office transactions in Great Britain with the public during the year ended March 31, 1949, was £3,053,595,000. This was a reduction of about £32,405,000 on the figure for the preceding 12 months, and was more than accounted for by a decrease in the savings bank deposits.

Postal.—The number of letters and letter packets posted during 1948–49 was estimated to have been 8,050,000,000, an increase of 450,000,000 on the traffic for 1947. The number of parcels handled during the year dropped from 243,500,000 to 239,601,000. This latter figure included 16,024,000 received from abroad, of which about 13,000,000 were gift parcels, mostly food and mainly from the British Commonwealth of Nations and the United States. On May 1, 1949, the inland registration fees were raised by one penny at each step of the scale. The minimum fee became 4*d.* covering compensation up to £5, 5*d.* covering compensation up to £20, then by 1*d.* at each step up to the maximum of 2*s.* for £400.

Air parcel services were started in April 1949 to many countries in Europe, and on June 1 the arrangements whereby first class mail (letters, letter packets and post cards) could be forwarded by air or surface route, whichever offered the earlier delivery, were extended to include Germany. A reduced air postage rate of 4*d.* a half-ounce was introduced on July 1 for second class mail (printed papers, commercial papers, samples, literature for the blind and small packets) to Canada, the United States and Mexico, thus extending this facility to include the whole of the western hemisphere. Some additional internal air mail services were introduced during 1949 and, in co-operation with British European Airways, the post office continued to study the problem of using helicopters for inland mail services.

Savings Bank.—Deposits for the year ended March 31, 1949, amounted to £371,869,000, a decrease of £54,959,000 on the sums deposited in 1947–48. The number of separate deposit accounts at the end of March 1949 was 23,562,000; on Dec. 31, 1948, the total amount due to depositors stood at £1,948,051,000. In the first three months of 1949, 22,050,000 savings certificates were purchased.

Personnel.—In March 1949 post office personnel numbered 348,224, with a wage bill (including national insurance contributions) of £113,250,000 a year. (For telecommunications, which in Great Britain constitute part of the operations of the post office department, *see* the article Telegraph. *See* also Philately and Photography.)

Films of 1949.—*Your Postal Service* (Johnson-Hunt Productions).

Potash: *see* Mineral and Metal Production and Prices.

Potatoes.

Total production of white potatoes in the U.S. in 1949 was again large at 401,962,000 bu., although 12% smaller than the 454,654,000 bu. of 1948, and compared with an average for the decade of 393,403,000 bu. In response to government request for acreage reduction to 1,938,000, the harvested acreage reached a new record low of 1,901,000, compared with 2,109,000 in 1948 and an average for 1938–47 of 2,730,000. Per-acre yields dropped slightly below the 1948 record, averaging 211.4 bu. against 215.5 in 1948 and only 145.5 for 1938–47.

An average price of approximately $1.40 per bushel was estimated for the crop, as compared with $1.55 for the 1948 crop; prices during 1949 varied between a high of $1.81 per bushel in the spring to $1.30 in October. The smaller crop with a support price of only 60% of parity meant that market prices for the most part were above support levels, acquisition under the government program promised to be smaller than for the 1948 crop but estimates of the probable loss ranged as high as $60,000,000. As of June 30, 1949, the Commodity Credit corporation reported that 101,926,292 cwt., or 38% of the 1948 crop of potatoes, of estimated value of $228,184,686, had been placed under price support. In Nov. 1949 the secretary of agriculture announced a 1950 price-support program based on 60% of a recomputed parity, or about $1.60 per hundredweight (96 cents per bushel). The national acreage allotment goal for commercial production for 1950 was set at 1,137,800 for a prospective production of 335,000,000 bu.

Estimated world potato production in 1949–50 of 8,000,000,000 bu. was 9% below the 8,800,000,000 bu. of 1948–49 and 4% below the prewar average. Acreage yields dropped to about 150 bu. compared with 168 bu. in 1948–49 and 164 bu. prewar. Acreage devoted to potatoes amounted to 53,300,000, 6% above prewar and slightly larger than the 52,200,000 ac. of 1948–49. Europe produced 55% of the crop, in spite of the fact that adverse weather in the western areas reduced the crop of that section 27% compared with 1948.

U.S. Potato Production by Leading States

(In thousands of bushels)

State	1949	1948	1947	Average, 1938–47
Late crop				
Maine	67,050	74,305	64,400	52,728
Idaho	34,560	45,000	28,600	35,048
New York	30,660	38,035	33,090	30,558
Pennsylvania	19,158	19,425	17,985	19,275
North Dakota	18,530	20,000	20,480	17,787
Colorado	18,150	21,450	18,500	15,506
Michigan	17,160	16,350	12,390	19,054
California	16,200	14,965	11,900	11,418
Minnesota	16,000	17,280	16,940	18,648
Wisconsin	13,600	13,050	10,080	13,292
Oregon	11,890	12,710	9,500	9,569
Washington	10,080	12,600	9,800	8,449
Intermediate Crop				
Virginia	9,126	11,529	9,450	8,808
New Jersey	8,554	13,629	13,514	10,793
Kentucky	2,730	2,542	3,366	3,750
Missouri	2,432	3,128	2,120	3,792
Early Crop				
California	30,030	32,400	26,040	17,430
North Carolina	7,869	10,430	8,840	9,128
Florida	5,428	3,745	3,272	4,240
Texas	3,686	4,356	4,536	4,419
Alabama	3,432	3,640	3,330	4,382
Tennessee	2,250	2,322	2,880	3,273
Arkansas	2,080	2,366	2,520	3,262

Sweet Potatoes.—The U.S. sweet potato crop of 1949 amounted to 54,232,000 bu., 8% more than the 50,204,000-bu. crop of 1948, but 15% below the 63,626,000-bu. average for the previous decade. The 542,000 ac. harvested exceeded the record low of 516,000 ac. in 1948, but was the second smallest of the century. The average yield of 100.1 bu. per acre exceeded the 97.4 bu. of 1948 and the 89.7-bu. average of the decade. The Texas yield of 105 bu. per acre against 65 bu. in 1948 was notable. Louisiana, as usual, was the leading producer (8,330,000 bu.), followed by Georgia (6,030,000 bu.), North Carolina (5,876,000 bu.) and Texas (5,775,000 bu.). The season average price to producers for the 1949 crop was estimated at $2.14 per bushel, not much below the $2.22 per bushel for the 1948 crop. (*See* also Food Supply of the World; Vegetables.)

(J. K. R.)

Poultry: *see* Livestock.

Precious Stones: *see* Gem Stones.

Presbyterian Church.

The western section of Reformed Churches throughout the world holding the Presbyterian system, within the United States of America, numbered 12 branches of Reformed Churches in 1949 and included 18,431 ministers, 18,479 churches and 4,234,288 communicant members.

The western section of the World Presbyterian alliance took steps in Feb. 1949 to promote the union of churches with emphasis on the reunion within the Reformed and Presbyterian Churches. Negotiations toward union were in progress between the Presbyterian Church in the United States (Southern) and the Presbyterian Church in the United States of America; and between the United Presbyterian Church of North America and the Reformed Church in America. A union of the Evangelical and Reformed Church with the Congregational-Christian Church was scheduled to form the United Church of Christ.

One of the great undertakings assumed by the member churches of the western section was the raising of funds for restoration of religious activities in countries ravaged by World War II. In the Presbyterian Church, U.S.A., alone, the cash returns reported in May 1949 amounted to $23,155,444. Extended Christian service through ministers and lay workers and the restoration of places of worship were made possible through these funds. The churches also undertook to help displaced persons in European countries.

Protestantism continued to make unusual strides in the Latin American countries. The first Inter-American Evangelical conference, which met at Buenos Aires, Arg., from July 18 to 31, 1949, was composed of approximately 70 official delegates from 17 countries of Latin America. Two major tasks of the Evangelical churches in Latin America were the dissemination of the Bible and the combating of secularism. In these tasks the Presbyterian and Reformed delegates held a special meeting to promote more united action in Latin America.

In the area of spiritual advance the emphasis upon evangelism produced significant results within the ranks of Presbyterian and Reformed Churches. The spiritual awakening brought many unchurched to a sense of their spiritual needs and resulted in increased membership. Through the New Life movement in the Presbyterian Church, U.S.A., many young people enlisted in the work of the church. The Westminster fellowship, the Geneva fellowship and the Westminster foundations did much to enlist the support of young people in Christian life and work. The women, through their local and national organizations, enlarged their mission work. The National Council of Presbyterian Men, organized in 1948, continued to educate Christian laymen in the work of Christian missions and in the vital relationship between protestantism and freedom.

Europe.—From the distraught conditions of the Reformed Churches in Europe a new life and a new structure were arising. The meetings of the Council of Reformed Churches at Geneva, Switz., in Aug. 1948 had initiated a more widespread influence. The extent of this Reformed influence was stated thus: "that of all the non-Roman Communions the Reformed is the most catholic both in geographical extension and in variety of race and language." Representatives to the council came from France, the Netherlands, Switzerland, Italy, Germany, Czechoslovakia and Hungary (with the largest Reformed Church on the continent). Delegates were present from Scotland, Ireland, England, Northern India, Ceylon, South Africa, Australia, New Zealand and America. Headquarters of the alliance opened in Geneva in Jan. 1949. This World Presbyterian alliance offered assistance to the European Reformed Churches in providing funds for the rebuilding of churches and for the sending of ministers into new areas. The alliance also enlisted women and youth through their organizations to further Christian brotherhood and ecumenical understanding. (*See* also CHURCH MEMBERSHIP.) (W. B. PU.)

Presidents, Sovereigns and Rulers.

The following list includes the names of those holding chief positions in their countries as of Jan. 1, 1950:

Country	Name and Office	Accession
Afghanistan	Mohammad Zahir Shah, King	1933
	Sardar Shah Mahmud Khan, Prime Minister	1946
Albania	Dr. Omer Nishani, Chairman of the Praesidium of the People's Assembly	1946
	Col. Gen. Enver Hoxha, Prime Minister	1944
Arabia, Saudi	'Abd-al-'Aziz Ibn-'Abd-al-Rahman Ibn-Faisal Ibn-Sa'ud, King	1927
Argentina	Gen. Juan Domingo Perón, President	1946
Australia	William John McKell, Governor General	1947
	Robert Gordon Menzies, Prime Minister	1949
Austria	Karl Renner, President	1945
	Leopold Figl, Chancellor	1945
Belgium	Leopold III, King (in exile)	1934
	Prince Charles, Regent	1944
	Gaston Eyskens, Prime Minister	1949
Bolivia	Mamerto Urriolagoitia, President	1949
Brazil	Gen. Eurico Gaspar Dutra, President	1946
Bulgaria	Mincho Neychev, Chairman of the Praesidium	1947
	Vasil Kolarov, Premier	1949
Burma	Sao Shwe Thaik, President of the Union of Burma	1948
	Thakin Nu, Prime Minister	1948
Canada	Field Marshal Viscount Alexander of Tunis, Governor General	1946
	Louis Stephen St. Laurent, Prime Minister	1948
Ceylon, Dom. of	Lord Soulbury, Governor General	1949
	Don Stephan Senanayake, Prime Minister	1948
Chile	Gabriel González Videla, President	1946
China	Li Tsung-jen, Acting President of the National Government	1949
	Yen Hsi-shan, Premier	1949
China, People's Republic of	Mao Tse-tung, Chairman of the Central People's Government of the People's Republic of China	1949
Colombia	Mariano Ospina Pérez, President	1946
Costa Rica	Otilio Ulate Blanco, President	1949
Cuba	Carlos Prío Socarrás, President	1948
Czechoslovakia	Klement Gottwald, President	1948
	Antonín Zápotocký, Prime Minister	1948
Denmark	Frederick IX, King	1947
	Hans Hedtoft, Prime Minister	1947
Dominican Rep.	Gen. Rafael Leónidas Trujillo y Molina, President	1942
Ecuador	Galo Plaza Lasso, President	1948
Egypt	Farouk I, King	1936
	Hussein Sirry Pasha, Prime Minister	1949
Ethiopia	Haile Selassie I, Emperor	1930
	Bitwoded Makonnen Endalkatchou, Prime Minister	1944
Finland	Juho K. Paasikivi, President	1946
	Karl August Fagerholm, Prime Minister	1948
France	Vincent Auriol, President of the Fourth Republic	1947
	Georges Bidault, President of the Council of Ministers (Prime Minister)	1949
Germany (East) German Democratic Rep.	Wilhelm Pieck, President	1949
	Otto Grotewohl, Minister-President (Premier)	1949
(West) Federal Rep. of Germany	Theodor Heuss, President	1949
	Konrad Adenauer, Chancellor	1949
Great Britain	George VI, King	1936
	Clement R. Attlee, Prime Minister	1945
Greece	Paul I, King	1947
	Alexander Diomedes, Prime Minister (resigned Jan. 5, 1950)	1949
Guatemala	Juan José Arévalo, President	1945
Haiti	Dumarsais Estimé, President	1946
Honduras	Juan Manuel Gálvez, President	1949
Hungary	Arpad Szakasits, President	1948
	Istvan Dobi, Prime Minister	1948
Iceland	Sveinn Bjornsson, President	1944
	Olafur Thors, Prime Minister	1949
India, Dom. of	Chakravarti Rajagopalachari, Governor-General	1948
	Jawaharlal Nehru, Prime Minister	1947
Indo China		
Cambodia	Norodom Sihanouk, King	1941
Laos	Sisavang Vong, King	?
Viet-Nam	Bao Dai, Emperor and Premier	1949
Viet-Nam, Democratic Rep.	Ho Chi Minh, (Communist) President	1945
Indonesia, Rep. of the United States of	Achmed Soekarno, President	1949
	Mohammed Hatta, Premier	1949
Iran	Mohammed Riza Pahlavi, Shahanshah	1941
	Mohammed Said Maraghei, Prime Minister	1948
Iraq	Feisal II, King	1939
	Abdul-Ilah, Prince Regent	1939
	Ali Jawdat al-Ayyubi, Prime Minister	1949
Ireland, Rep. of	Sean T. O'Kelly, President	1945
	John A. Costello, Prime Minister	1948
Israel	Chaim Weizmann, President	1948
	David Ben-Gurion, Prime Minister	1948
Italy	Luigi Einaudi, President	1948
	Alcide de Gasperi, Prime Minister	1946
Japan	Hirohito, Emperor	1926
	Shigeru Yoshida, Premier	1948
	Gen. Douglas MacArthur, Supreme Commander for the Allied Powers	1945
Jordan	Abdullah ibn Hussein, King	1946
	Tawfiq Pasha Abu-Huda, Prime Minister	1947
Korea (South) Rep. of Korea	Syngman Rhee, President	1948
(North) Democratic People's Rep. of Korea	Kim Il-sung, Premier	1948
Kuwait	Sheikh Sir Ahmed ibn Jabir al-Subah	1921
Lebanon	Sheikh Bishara al-Khuri, President	1943
	Riad Bey al-Sulh, Prime Minister	1946
Liberia	William V. S. Tubman, President	1944
Liechtenstein	Franz Joseph II, Sovereign Prince	1938
	Alexander Frick, Chief of Government	1945
Luxembourg	Charlotte, Grand Duchess	1919
	Pierre Dupong, Premier	1937
Mexico	Miguel Alemán, President	1946
Monaco	Rainier III, Prince	1949
Morocco	Sidi Mohammed ben Youssef, Sultan	1927
	Gen. Alphonse-Pierre Juin, French Resident General	1947
Nepal	Tribhubana Bir Bikram Jung Bahadur, King	1911
	Gen. Sir Mohan Shumshere Jung Bahadur, Prime Minister	1948
Netherlands	Juliana, Queen	1948
	Willem Drees, Prime Minister	1948
New Zealand, Dom. of	Lt. Gen. Sir Bernard Freyberg, Governor General	1946
	Sidney George Holland, Prime Minister	1949
Nicaragua	Victor Manuel Román y Reyes, President	1947
Norway	Haakon VII, King	1905
	Einar Gerhardsen, Prime Minister	1945
Oman (Muscat)	Sir Sayyid Said bin Taimur, Sultan	1932
Pakistan, Dom. of	Khwaja Nazimuddin, Governor General	1948
	Liaquat Ali Khan, Prime Minister	1947
Panamá	Arnulfo Arias Madrid, President	1949
Paraguay	Federico Chaves, President	1949
Peru	Gen. Manuel Odría, President of the Military Junta of Government	1948
Philippines, Rep. of the	Elpidio Quirino, President	1948
Poland	Boleslaw Bierut, President	1947
	Jósef Cyrankiewicz, Prime Minister	1947
Portugal	Marshal Antonio Oscar de Fragoso Carmona, President	1928
	Antonio de Oliveira Salazar, President, Council of Ministers (Prime Minister)	1932
Rumania	Constantin Parhon, Chairman of the State Praesidium	1948
	Petru Groza, Prime Minister	1945

Country	Name and Office	Accession
Salvador, El	Major Oscar Bolaños Humberto Costa } Leaders of the Temporary Junta	1948
South Africa	Gideon Brand van Zyl, Governor General	1946
	Daniel F. Malan, Prime Minister	1948
Spain	Gen. Francisco Franco, Chief of State (President of the Council of Ministers)	1938
Sudan	Sir Robert George Howe, Governor General	1947
Sweden	Gustavus V, King	1907
	Tage Erlander, Prime Minister	1946
Switzerland	Max Petitpierre, President, Swiss Confederation	1950
Syria	Hashem Bey Atassi, President	1949
	Khalid el-Azam	1949
Thailand	Phumiphon Adundet, King	1946
	Field Marshal Luang Pibul Songgram, Prime Minister	1948
Tunisia	Sidi Mohammed el-Amin, Bey	1943
	Jean Mons, French Resident General	1947
Turkey	Gen. Ismet Inönü, President	1938
	Semsettin Günaltay, Prime Minister	1949
Union of Soviet Socialist Republics	Nikolai Mikhailovich Shvernik, Chairman of the Praesidium of the Supreme Soviet	1946
	Generalissimo Joseph V. Stalin, Chairman of the Council of Ministers	1946
United States	Harry S. Truman, President	1945
Uruguay	Luís Batlle Berres, President	1947
Vatican City	Pius XII, Pope	1939
Venezuela	Lt. Col. Carlos Delgado Chalbaud, Provisional President	1948
Yemen	Sayf al-Islam Ahmad ibn Yahya, King	1948
Yugoslavia	Ivan Ribar, Chairman of the Praesidium of the People's Assembly	1945
	Josip Brozovich or Broz (Tito), Premier	1944
Zanzibar	(Sir) Sayyid Khalifa bin Harub	1911
	Sir Vincent Goncalves Glenday, British Resident	1946

Prices.

In the United States a gradual decline in the general levels of both wholesale and retail prices which began in the late summer of 1948 continued throughout 1949. By December, wholesale prices had declined 10.6% and retail prices 4% from the postwar highs in Aug. 1948. Wholesale prices of all major commodity groups had fallen, the most substantial decreases being registered in farm products (21.3%), chemicals and allied products (16.4%) and food (16.1%). At the retail level, decreases in the prices of food (9.0%), apparel (7.8%) and housefurnishings (6.7%) were somewhat offset in the cost-of-living index by the relatively small increases in rent, miscellaneous, and fuel, electricity and refrigeration, all of which attained new postwar highs at the end of the year. Despite the general over-all decline in prices during the year, the wholesale price index was slightly more than 100% greater in Dec. 1949 than in Aug. 1939; and the consumers' price index was 70% greater than that of Aug. 1939.

Wholesale prices for each major group of commodities shown in Table I, except as indicated below, reached their postwar highs in 1948: farm products, chemicals and allied products and the miscellaneous group of commodities in January; textile products in April; food in August; building materials in September; fuel and lighting materials in November; and housefurnishings in December. Only hides and leather products and metal and metal products reached their peaks other than in 1948, the months being respectively Dec. 1947 and Jan. 1949.

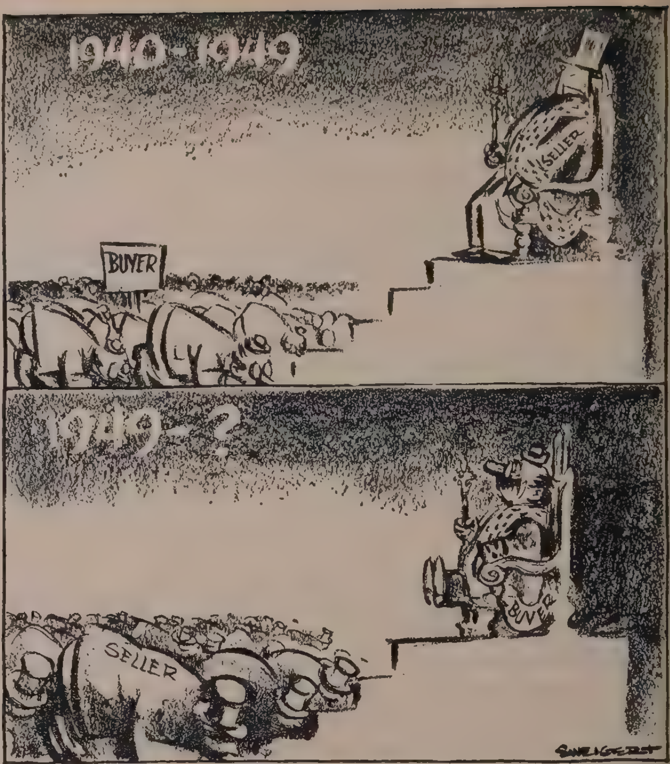
Table I.—*Per Cent Increase in Wholesale Prices, by Major Commodity Groups, United States, Prewar Prices to Postwar High Points*

Commodity group	High post World War II increase from Aug. 1939*	High post World War I 1920 increase from July 1914
All commodities	126	148
Farm products	227	138
Foods	182	137
Textile products	122	252
Fuel and lighting materials	90	277
Metals and metal products	88	99
Building materials	128	218
Hides and leather products	119	192
Chemicals and allied products	87	123
Housefurnishing goods	73	164
Miscellaneous	69	102

*As explained in the text, except for two commodity groups the high point was reached in 1948. The peak month varied with the different commodity groups.

Source: Computed from data published by the bureau of labour statistics of the U.S. dept. of labour. Except as otherwise indicated, all computations presented in this article are based on such data.

As shown in Table I, wholesale prices generally advanced less percentagewise after World War II than after World War I, the notable exceptions being farm products and food prices. The smallest relative increases were registered by three groups, in the following order: fuel and lighting materials, housefurnishing goods and textile products. The only commodity group for which price increases were roughly comparable during both periods was metal and metal products.



GRAPHIC PICTURE, by Sweigert of the *San Francisco Chronicle*, of the reversal of buyers' and sellers' markets which took place during 1949

On the retail level, as reflected by the cost of living indexes of the bureau of labour statistics, the postwar peak in the prices of all items was reached in Aug. 1948 when the index was 77% above that for Aug. 1939. Food prices reached their highest levels in July 1948, and apparel and housefurnishings in October. The prices of the remaining three items in the cost-of-living index—rent, fuel, electricity and refrigeration, and miscellaneous—continued to rise to new highs at the end of 1949.

Table II.—*Per Cent Increase in Cost of Living (Consumers' Retail Prices), by Major Items, United States, Prewar Prices to Postwar High Points*

Item	High post World War II increase from Aug. 1939*	High post World War I 1920 increase from July 1914
All items	77	101
Food	132	126
Apparel	101	176
Rent	17	51
Fuel, electricity, etc.	43	49
Housefurnishings	98	†
Miscellaneous	55	82

*For all items the high point was reached in August, for food in July, for apparel in October, and for housefurnishings in October—all in 1948. The high for each of the other three items was attained in Dec. 1949.

†Not available.

Source: Computed from data published by the National Industrial Conference Board for the years 1914–20 and the bureau of labour statistics for the period beginning with 1920.

When compared with the increases in the cost of living during the World War I period (*see* Table II), the price rise for all items was not as severe during the World War II period—77% as against 101%. Only in food (which, however, is a sizable item in the budget of a moderate-income family for which the cost of living index is computed) was the price increase in the later period greater (132% compared with 126%); in rent the increase was one-third as great and in apparel less than two-thirds as much.

As shown in Table III, wholesale prices for all commodities were, at the end of 1949, 102% greater than in Aug. 1939, 62%

greater than at the start of the war in Dec. 1941, and 34.3% greater than at the ending of price controls in June 1946. However, wholesale prices had declined 6.7% during 1949. The downward trend was continuous throughout the year except for two slight upturns in March and September. At the beginning of the year, prices dropped 2.6%, largely as a result of heavy nventory liquidations, which were carried out in an orderly manner. The return to a shorter work week, cutbacks in production and high levels of consumer expenditures prevented a greater decline in industrial and raw material prices, and government support programs prevented a greater decline in the prices of farm products and foods.

Table III.—*Per Cent Change in Wholesale Prices, by Major Commodity Groups, United States, Selected Periods, 1939–1949*

Commodity	Per cent change Nov. 1949 from Post-war high	Dec. 1948	June 1946	Dec. 1941	Aug. 1939	Postwar high from Dec. 1948	Dec. 1948 from Dec. 1947
Farm products	−21.3	−11.6	+11.9	+65.6	+157.0	+12.4	− 9.9
Foods	−16.1	− 6.6	+40.7	+75.6	+136.5	+11.3	− 4.6
Textile products	− 8.2	− 6.0	+26.4	+50.3	+103.5	+ 2.5	− 0.9
Fuel and lighting materials .	− 5.5	− 5.2	+48.1	+65.8	+ 79.1	+ 0.3	+10.1
Metals and metal products .	− 4.7	− 3.7	+49.1	+62.0	+ 79.5	+ 1.0	+14.7
Building materials.	− 7.1	− 6.3	+45.9	+75.8	+111.5	+ 0.8	+ 5.9
Hides and leather products .	−11.1	− 2.4	+47.7	+57.5	+195.0	+ 9.8	− 8.9
Chemicals and allied products	−16.4	−11.4	+20.4	+28.4	+ 56.5	+ 5.9	− 2.9
Housefurnishing goods . . .	− 3.4	− 3.4	+29.9	+41.8	+ 67.5	0.0	+ 6.5
Miscellaneous	−11.2	− 7.4	+11.4	+25.2	+ 49.7	+ 4.3	− 2.5
All commodities.	−10.6	− 6.7	+34.3	+62.0	+102.0	+ 4.4	− 0.5

Consumers' prices, which levelled off during 1948, fluctuated sporadically during 1949, and at the end of the year were 2.3% lower than at the end of the previous year. Retail prices were still 25.7% above the June 1946 level, at which time price controls were removed, 51.6% above the level of Dec. 1941, and 69.9% above the Aug. 1939 level.

Declines in the prices of food, clothing and housefurnishings more than offset the increases in other consumers' prices shown in Table IV.

Table IV.—*Per Cent Change in Consumers' Prices (Cost of Living), by Major Commodity Groups, United States, Selected Periods 1939–1949*

Commodity	Per cent change end of 1949 from Post-war high	Dec. 1948	June 1946	Dec. 1941	Aug. 1939	Postwar high from Dec. 1948	Dec. 1948 from Dec. 1947
Food	−9.0	−3.8	+35.5	+74.4	+111.0	+5.8	−0.9
Apparel.	−7.8	−7.3	+18.2	+61.8	+ 85.2	+0.6	+4.8
Rent	0.0	+2.3	+12.6	+12.9	+ 17.2	+2.3	+3.6
Fuel, electricity and ice .	0.0	+1.4	+26.4	+34.2	+ 43.3	+1.4	+7.8
Housefurnishings	−6.7	−6.6	+18.8	+58.8	+ 84.4	+0.1	+3.8
Miscellaneous	0.0	+0.8	+21.4	+44.2	+ 54.7	+0.8	+6.6
All items.	−4.0	−2.3	+25.7	+51.6	+ 69.9	+1.8	+2.6

The most important single item in the consumers' price index is food. Had retail food prices declined during the year as much as wholesale food prices, the cost-of-living index would have been lowered substantially. Table V, showing monthly changes in the various groups comprising the cost-of-living index, indicates the importance of the two items, food and rent. The three peaks attained by the index of all items during the year—those in April, June and September—largely reflect sudden upturns in the prices of food and rent.

Table V.—*Consumers' Price Index (Cost of Living), by Major Commodity Groups, United States, Dec. 1948–Dec. 1949*

(Dec. 1948=100)

Year and month	All items	Food	Apparel	Rent	Fuel, electricity and ice	House-furnishings	Miscel-laneous
1948							
December . . .	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1949							
January	99.7	99.9	98.1	100.2	100.3	98.9	100.1
February	98.6	97.4	97.4	100.3	100.7	98.5	100.1
March	98.9	98.3	96.8	100.5	100.8	97.6	100.3
April	99.0	98.9	96.1	100.7	99.7	96.6	100.4
May.	98.7	98.7	95.5	100.8	98.3	95.4	100.3
June.	98.9	99.7	95.0	100.9	98.4	94.3	100.1
July	98.3	98.4	94.1	101.0	98.4	94.1	100.2
August	98.5	98.8	93.5	101.1	98.5	93.1	100.5
September . . .	98.9	99.6	93.4	101.4	99.4	93.4	100.8
October	98.3	97.9	93.2	101.7	100.4	93.3	100.8
November . . .	98.4	98.0	93.0	102.1	100.9	93.4	100.6
December . . .	97.7	96.2	92.7	102 3	101.4	93.4	100.8

The downward trends of wholesale and retail prices during 1949 are summarized in Table VI and in the chart below.

Some of the decrease in wholesale prices resulted from the reduction in exports caused by dollar shortages abroad. Since foreign demand in the postwar years was largely for commodities which were in shortest supply, this demand had a very strong influence on domestic prices. The decrease in exports largely reflected the revival of foreign economies on the one hand and inability to pay for imports from the United States on the other. The devaluation of foreign currencies during the year also exerted downward pressure on wholesale prices since in most cases devaluation abroad did not lead to a proportionate increase in prices of foreign exports to the United States. Other factors which tended to have a depressing effect upon prices were inventory liquidations, the overcoming of nearly all shortages in strategic raw materials, the decline in new plant expansion and competitive pressures. Factors tending to sustain high prices were the continued high-level government and individual expenditures, temporary scarcity of commodities where output was curtailed by labour disputes, rent decontrol and foreign demands subsidized by the United States. In general, the continued high levels of wholesale and consumers' prices were sustained by the continued high level of economic activity in the United States which was buttressed by large government expenditures for national defense, foreign aid and farm price support programs. (*See* also Income and Product, U.S.)

Table VI.—*Index of Wholesale and Consumers' Prices, United States, Dec. 1948–Dec. 1949*

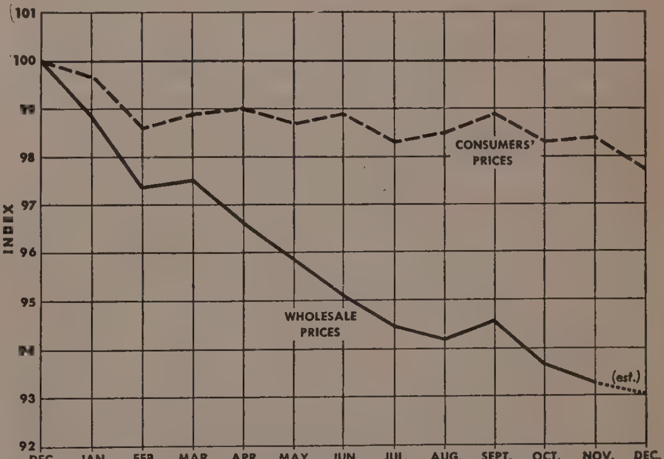
(Dec. 1948=100)

Year and month	Wholesale price	Consumers' price
1948		
December	100.0	100.0
1949		
January	98.9	99.7
February	97.4	98.6
March	97.5	98.9
April.	96.6	99.0
May	95.9	98.7
June	95.1	98.9
July	94.5	98.3
August	94.2	98.5
September	94.6	98.9
October	93.7	98.3
November	93.3	98.4
December	*	97.7

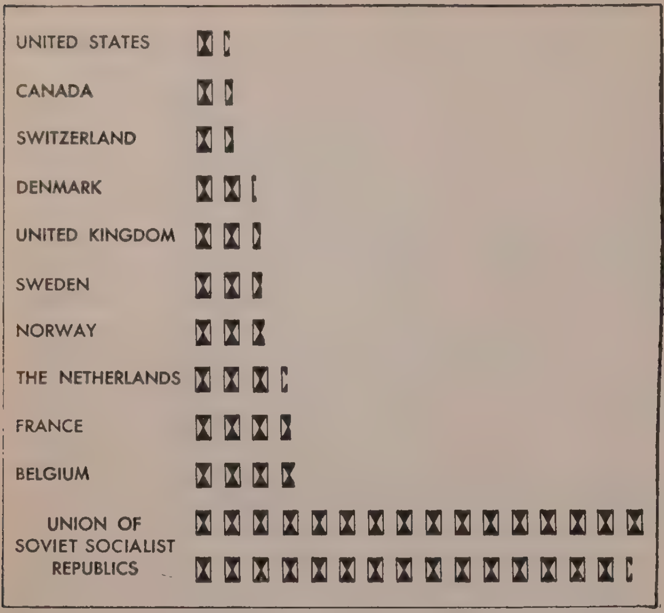
*Not available.

(W. V. Wr.)

Great Britain.—The course of prices in the United Kingdom in 1949 was dominated by the devaluation of sterling in September. The upward movement in prices had been general and continuous from the end of World War II until the middle of 1948.



WHOLESALE AND CONSUMERS' PRICES in the United States, Dec. 1948-Dec. 1949 (Dec. 1948=100) (Source: U.S. Department of Labor, Bureau of Labor Statistics)



WORKING HOURS required to buy a pair of shoes, by countries. Each hour glass represents eight hours of work at the average rate of pay in the manufacturing industries (Source: Department of Commerce)

The rise in prices was then halted, and during the following 12 months prices were generally stationary or falling. A slow but definite downward movement in general price levels (apart from adjustments in subsidies and taxation) was the characteristic feature of the middle months of 1949. This trend was violently changed by devaluation. Although only partial and immediate effects were reflected in price index numbers by the end of 1949, the prospects then were for continued and (in some sectors) large price increases for many months to come.

The downward movement in prices during the months before devaluation in Sept. 1949 was most clear in prices of imports. Early in 1949, import prices stood at a level three times that of 1938; at the time of devaluation they had been lowered by more than 5%. Prices of imported foodstuffs declined equally with raw material prices. The prices of United Kingdom exports remained firm during this period of falling import prices. As a result, the decline in the prices paid for imports was matched by an improvement in the terms of trade. At the end of 1948, terms of trade were almost 20% less favourable than in 1938; by the time of devaluation in 1949 this differential had been reduced to little more than 10%.

The trend of domestic prices was less easy to follow since the prices were affected by changes in subsidies, in indirect taxation and in controls. Prices received by domestic farmers, inclusive of all government payments, were largely a matter of agreement between the farmers and the government; apart from seasonal variations, they did not differ much between 1948 and 1949. Prices of commodities, both at wholesale and at retail, were affected between April and June by a set of adjustments, following the budget and the declared policy to limit the total amount of subsidies and trading losses by the government. The main adjustments were in iron and steel prices and in the prices of some basic foods—meat, butter, margarine, cheese and eggs. There were also budget changes, particularly in the prices of beer and matches.

Among wholesale prices, the group of prices of basic foodstuffs (cereals, meat, fish and dairy produce) was increased from 50% to nearly 75% above 1938. This was almost entirely the result of the limitation of subsidies. Similarly, iron and steel prices, under governmental control, were adjusted to give an average increase from less than 70% to more than 85% above 1938. In addition, prices of industrial materials declined fairly rapidly in the first nine months of 1949, and food prices at wholesale showed no more than normal seasonal changes (*e.g.*, in fruit and vegetable quotations). The general index of wholesale prices at the beginning of 1949 was 218% of 1938, practically the same figure as at mid-1948. In Aug. 1949 the recorded index was 225% of 1938, but elimination of the effect of adjustments in prices of iron and steel and of subsidized foods would reduce the figure to about 210% of 1938. This figure was comparable with the index at the beginning of the year, indicating that the underlying movement in wholesale prices was downward. The fall amounted to about 3% or 4% in eight months and was mainly the result of declining prices of nonferrous metals, textile materials and other (nonfood) agricultural and forest products.

The adjustments in subsidized food prices raised the index of retail prices of all foods from 50% to about 60% above 1938. The index of all retail prices, affected also by the reduction in the price of beer and the increase in the price of matches following the budget, was raised from about 175% of 1938 to nearly 180% of the prewar level. Otherwise the general level of retail prices remained almost unchanged during the nine months before devaluation.

By the end of 1949, recorded index numbers of prices reflected the consequences of devaluation to a limited extent. The longer-run effect of devaluation, to be expected during 1950, could only be roughly guessed.

Europe.—As in 1948, the greatest stability in prices, both at wholesale and at retail, was in the Scandinavian countries, and the movement was very slight. In the Netherlands, wholesale and retail prices rose toward the end of 1948 but became more stable in 1949. The two countries with hard currencies, Belgium and Switzerland, experienced a considerable amount of deflation, and prices declined in 1949, particularly at the wholesale stage. Of the two main countries where inflationary pressure was strongest, France was the more successful in controlling prices. In Italy, although there was no repetition of the inflation experienced up to 1947, prices were by no means stable. Prices fell and then rose again in 1948, with some reaction in 1949.

British Commonwealth.—The movement of prices in countries of the British Commonwealth of Nations was similar to that in the U.S. or the United Kingdom. Both wholesale and retail prices reached a peak in the middle or during the second half of 1948; the trend was subsequently stationary or downward until the devaluation of sterling in 1949. Price declines were most evident in Canada, India and Pakistan. In Australia and South Africa, there was a greater stability in price levels, and price rises were slightly more numerous than price falls after the middle of 1948. (*See* also Agriculture; Business Review; Consumer Credit; Food Supply of the World; Stocks and Bonds; Wages and Hours; and articles on individual commodities.) (R. G. D. A.)

Primary Education: *see* Education.

Prince Edward Island. Smallest province of Canada, 2,184 sq.mi., Prince Edward Island lies in the Gulf of St. Lawrence nine miles from the mainland. Pop. (1941) 95,047; (1949 est.) 94,000. Provincial cap.: Charlottetown; pop. (1941) 14,821.

History.—Important legislature of 1949 included: a new workmen's compensation act modelled closely on the Nova Scotia act; repeal of the controversial 1948 act which had required all labour unions to be provincially autonomous, and which had required all employees to be provincial residents; payment of allowances for the first time in provincial history to needy mothers, if husbands were incapacitated or had deserted;

extension of apprenticeship act to cover garage mechanics. The 1937 law banning sale of margarine was brought into force by proclamation.

The public accounts for the fiscal year ending March 31, 1948, were reported early in 1949. They showed total ordinary revenue of $5,231,699 and an actual surplus on current account of $355,990. Tabling the 1949–50 budget in March, the government announced expected island revenues of $5,961,605, and expected expenditures of $7,402,640, which would increase the public debt by about $1,000,000. Main 1949–50 expenditures: health and welfare, $2,000,000; public works, $800,000.

Education.—The 1949–50 budget allocated $840,000 for education. Latest revised statistics were for 1946 provincially controlled schools: total enrolment, 18,085; average daily attendance, 14,321; teachers, 668; total revenue, $642,357.

Communications and Travel.—To help boost the tourist trade, the government voted nearly $2,000,000 for 1949–50 highway expansion. To complete dieselization of the island's railways, 18 diesel-electric locomotives were put on order by the Canadian National Railways. Tourist trade for 1948 was valued at $40,000,000, with 12,000 more visitors than in 1947.

Agriculture.—Crops during 1949 were better than average, with potato shipments during the first nine months almost double the shipments for the same 1948 period. Dairy production for 1948 included 4,500,000 lb. of creamery butter, which was 22% over 1947 production. In 1948, 50,000 ac. of potatoes produced about 10,000,000 bu. but they sold for about $3,000,000 less than the smaller 1947 crop of 43,500 ac. Cheese production for 1948 reached 706,000 lb., 6% over 1947. Chick production fell to 486,000 against 616,000 in 1947.

Fisheries.—Successful shipment of live lobsters in cans was continued and there were expectations that the 1949 harvest would exceed that of 1948 which had in turn been 360,000 lb. greater than for 1947. Although 1948 fish landings were down to 33,000,000 lb. compared with 37,358,000 lb. in 1947, the 1948 values were $310,000 higher than 1947 values of $1,880,000. The 1948 oyster catch was 669,000 lb. greater than that of 1947. (C. Cy.)

Principe: *see* Portuguese Colonial Empire.

Printing.

Announcements of phototypesetting mechanisms continued during the year 1949. One, unofficially named Lumitype, was designed for book, magazine and newspaper composition. Public demonstrations of a laboratory model were held by Graphic Arts Research foundation. The machine was the invention of two French communications engineers, René A. Higonnet and Louis Moyroud. Joined with the foundation were Vannevar Bush and Samuel Caldwell. Bush was the inventor of the telephonic relay system which is employed in a limited manner in the phototypesetting machine.

There are five basic parts: (1) an electric typewriter, (2) a memory unit, (3) a counterjustifier which is an electrical computing and control system, (4) an automatic photographic unit, and (5) an automatic stripping machine. The typewriter types characters on paper just as is done on the conventional machine; also, as each character is typed its set-width is coded and stored in a memory device. The system used is based on units of 0.01 in. (actually two-tenths of a millimeter). Thus, as each line is typed an indicating dial records by increments progressively the units occupied by letter characters and the word spaces. Having typed the maximum number of words which will go into the line, the operator depresses a special key. Switching elements in the counterjustifier add the number of units required for words and spaces between words. The total number of units is subtracted from the maximum number of units required to fill the line. The excess space required to fill the line to constant width is then automatically distributed evenly between the words.

The counterjustifier then sends its signals to the automatic photographic unit. In the photographic unit is a continuously revolving vertically positioned glass disk six inches in diameter. Inset radially through the disk are photographic negatives of all the letter characters in the usual type font. Set at right angles to the disk is a high-speed stroboscopic lamp which emits flashes of two-millionths of a second duration. The lamp rays arrest the movement of the negative letter character in the revolving disk during exposure to the film. At the other side of the disk and also at right angles to it but in line with the apertures in the whirling disk is a lens system and the sensitized film. When an impulse is created by one of the coded characters a beam of light, triggered by a photoelectric cell, passes through the selected negative in the whirling disk into a lens system focused on the photographic film. Letter characters are photographed on the film at six exposures per second. After development, the film can be printed down on sensitized or Ozalid paper for proofreading.

The automatic stripping mechanism makes corrections in previously composed matter, inserts folios, page numbers and running heads and automatically photographs a new film all ready to be used by the platemaker. The proofreader's corrections are made on a new film and a code mark is placed at one side of the line or lines containing errors on the original film. The original film and corrected film are fed into the stripping machine simultaneously. The machine photographs a new film from the original composition until one of the code signals indicated by the proofreader tells the machine to shift to the corrected film. After the corrected line or lines have been photographed on the new or third film, the stripping machine is shifted back to the original film. Operation is at a speed of ten average-width lines per second.

Introduction of the Hadego Photocompositor invented by Ir. H. J. A. de Goey, Haarlem, Neth., for display line typesetting in negative or positive film form was made. With the exception of the photographic operation, the machine is based upon the principle of the U.S. Ludlow hot-metal machine. Matrices consist of 48-pt. white letter characters upon a black background affixed to clear plastic blocks. Letter characters are assembled like hot-metal matrices in a stick; the stick containing the line is placed before the camera and the exposure is made. Letter characters may be reproduced photographically on the film down to 19 pt. or up to 115 pt. Leading between lines on the film may be obtained from 0 to 24 pt. The film holder carries a film 11½ in. by 16 in.

An announcement of the Justowriter was made. This equipment eliminates the necessity of manually retyping lines to obtain equidistant line length. It consists of two units, an electric typewriter and an automatic retyping machine. The product of the latter is evenly justified lines of type matter in column form ready for use by the platemaker. When typing matter initially, the operator leaves the right-hand margin unjustified with respect to uniform line length. In addition to typing lines on paper as is done on the standard typewriter, the machine on which initial typing is done produces a punched tape, similar to Teletypesetter tape. When composition has been finished, the tape is inserted in the automatic typing machine which produces typed copy with lines of equidistant line length with spacing between words.

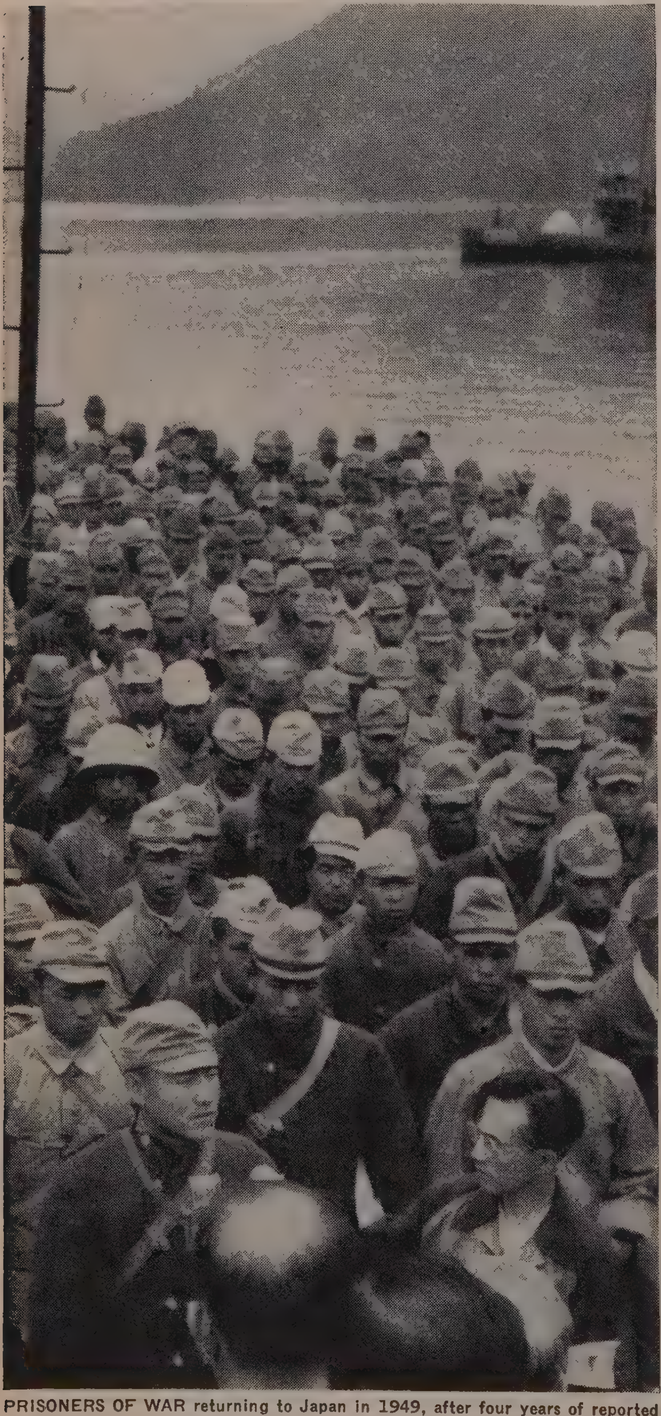
An early technical problem in photomechanical platemaking was the conversion of a black and white photograph in a colour process set of plates. With the Flexichrome process announced in 1949, this work would revert in many instances from a highly skilled etching process to one of semiart and photographic method. In other words, it is a copy preparation method. The black and white photograph to be reproduced in colour is photographed to the wanted size on a sheet of special stripping film. The film is developed and fixed; it is then put through baths which bleach out the silver image, dye and swell the film gelatine surface, after which the film is mounted on a paper support. Colour is applied by an artist similarly to colouring a photograph. Colour is blobbed on the gelatine film. Colouring a Flexichrome print actually is a matter of good colour selection rather than skilful application. In the processing, the gelatine on the film takes on various heights or thicknesses. The varying thicknesses of gelatine absorb the colour medium in varying amounts. A colour may be changed after it has been applied and retouching with colour art mediums may also be used on the print for colour improvement. After the photograph has been coloured, it is ready to be colour-separated by the photo-engraver or offset-lith platemaker by the usual methods.

Films of 1949.—*Here's How We Print* (H. A. Klein). (M. Si.)

Prisoners of War.

Albania, Poland and the U.S.S.R. alone of all the nations which participated in World War II still retained prisoners of war at the end of 1949. The total number was not known but was estimated to exceed 1,000,000.

France completed repatriation of all prisoners of war held by that country in metropolitan France, the French zone of Germany and North Africa on Dec. 31, 1948. However, approximately 130,000 former prisoners remained as civilian workers, and a certain number still were held for legal reasons.



PRISONERS OF WAR returning to Japan in 1949, after four years of reported Communist indoctrination in the P.O.W. camps of Siberia, U.S.S.R.

Yugoslavia announced that there were no longer any prisoners of war in that country. As in France, a certain number remained as civilian workers, and others were held for legal reasons.

Czechoslovakia completed its repatriation of prisoners of war in 1949.

Poland, which held 40,000 prisoners of war at the end of 1948, still retained several thousand whose repatriation was promised by the end of 1949.

Albania held throughout 1949 the 250 prisoners of war it reported in 1948 without any indications as to when they would be repatriated.

The U.S.S.R. repatriated a certain number of both German and Japanese prisoners of war during the year, but the total number repatriated and the total number of prisoners of war still held by the U.S.S.R. was not known. Steps taken by various governments and by the International Red Cross to hasten repatriation of these prisoners brought responses that repatriation was being effected as rapidly as possible.

Representatives of 58 nations (including the U.S.S.R.) meeting in Geneva, Switzerland, April 21–Aug. 12, 1949, completed the revision of the 1929 Prisoner of War convention. Twenty-nine states signed the revised convention in Geneva on Dec. 8, 1949, and during the following few weeks, 22 others deposited their signatures. (*See* also Red Cross.) (H. W. Dg.)

Prisons.

During 1949 the state of New York reopened Greenhaven, a maximum security prison which the army operated during World War II. In Ohio plans were initiated for the construction of a new reformatory and two additional units at the state hospital, one for defective delinquents, the other for psychopaths. In Massachusetts sufficient money was appropriated to build a modern state penitentiary to replace the century-old Charleston prison, which had long been condemned.

California opened a new medium security prison at Soledad and a combined medical and reception centre in Vacaville, in the northern part of the state. In southern California, a reception centre was started at Chino. The state also announced plans for a new women's institution and a special institution for youthful offenders. Virginia reported that it would erect a medium security prison of the farm type in the near future.

Utah started to build a new prison which was to be completed in 1950. Idaho opened its first parole camp, which has a twofold purpose: to aid men who will soon be paroled and to develop Idaho's lands near St. Maries. Selected prisoners, supervised by parole officers, not guards, are thus prepared to bridge the gap between the routine life of the prison and the free community. The federal prisons, also emphasizing preparation for parole, began to allow some prisoners to live in special quarters set up within an institution and to wear civilian clothes. In addition, the federal bureau of prisons started a program under which public spirited citizens would offer constructive guidance to released inmates.

In Texas, more than $4,000,000 was appropriated for the improvement of the state's correctional system. Construction work started in April. The Huntsville prison was remodelled, a textile mill was erected and laundries and bathhouses were set up at the institutions located in Wynne, Goree, Darrington, Retrieve, Clemens and Harlem. More important, the prison farms were modernized and considerable equipment was purchased.

In Michigan, under a new program inaugurated in May, each mate at the Jackson prison was assigned an adviser. As a esult, every man within the walls acquired a personal link with l administrative functions of the institution. Counsellors were iven office space readily accessible to inmates, and they could herefore understand administrative procedures more clearly nd discuss personal problems in a friendlier atmosphere.

New Jersey opened the first unit of its new diagnostic centre here ample facilities were provided for the examination of wbreakers and other maladjusted persons. At the reformatory Bordentown, a project believed to be unique in the annals f U.S. penology, proved successful. Ten inmates completed a ourse of study in Braille and continued their education. New ersey also further developed and experimented with the use f group psychotherapy, a rehabilitative procedure which proved promising that it was being practised in other states.

(S. A. L.)

Great Britain.—In England and Wales overcrowding and nderstaffing continued through 1949. The daily average prison opulation remained about 20,000, almost double the prewar gure. Two more prisons were opened, at the Verne, Portland, or Star class prisoners and at Eastchurch, Kent, for civil risoners and short-sentence Stars; in both open camp conitions obtained.

The statistical results of the system reported in 1949 showed slight improvement. Of those who from 1930 to 1945 came prison for the first time for offenses serious enough to warant the taking of fingerprints, the percentage of reconviction t the end of 1947 was below 20% for ordinary prisons and bout 10% for special training prisons.

The Borstal system, less affected by overcrowding or underaffing, maintained its steady recovery from war and postwar ifficulties along established lines. Vocational training was exanded to some 50 classes in a dozen trades. Week-end home eave for boys was reintroduced. Statistical results showed that, p to Dec. 31, 1948, of those discharged during the years 942–46 about 74% of boys and 81% of girls had not reverted crime.

The most important event of 1949 was the coming into force f those sections of the Criminal Justice act, 1948, which diectly affected the prison system. The abolition of penal serviude, hard labour and the triple division of imprisonment left nly the single sentence of imprisonment for all offenders not ealt with as persistent offenders: for these the act provided wo forms of sentence; viz., corrective training (2–4 yr.) and reventive detention (5–14 yr.). The restrictions on the imrisonment of persons under 21 resulted in a fall in the young risoner population, enabling the closing of two more young risoner centres. Young prisoners with sentences of three onths or over were now released on a conditional licence. In onsequence, the prison system was substantially reorganized. here were now local prisons (reception and short term), egional prisons (special training of selected prisoners) and entral prisons (long term), including six open prisons.

Scottish prisons did not suffer from overcrowding, the poputtion remaining 20% above 1938 level. The Scottish Advisory ouncil on the Treatment and Rehabilitation of Offenders pubshed a far-reaching report on the Scottish prison system. *See* also Crime.)

(L. W. F.)

rizes of 1949: *see* Literary Prizes; Nobel Prizes; Puitzer Prizes. *See* also Art Exhibitions; Mineralogy; Moon Pictures; Roman Catholic Church; Societies and ssociations; Theatre; etc.

roduction, Industrial: *see* Business Review.

rofits, Company: *see* Business Review; Taxation.

Propaganda. The outstanding propagandas of 1949 were those of the "cold war" between the Union of Soviet Socialist Republics and the United States of America, their allies and *de facto* allies. The latter included the Russian Orthodox Church, which gave God's blessing to the Soviet Union and communism as, in the days before 1917, it had given God's approval to the Russia of the czars; and the Roman Catholic Church, which saw communism and the Soviet Union as deadly evils and conveyed God's blessing to nations opposed to them.

The "cold war" began in the closing days of World War II. It expressed the determination of the Soviet Union and the United States to hold the gains in territory, military potential and influence they had achieved in World War II. Historically, the "cold war" was not new; it was a resumption of the hundred years' war of the competing propagandas of capitalism and communism which had begun a century earlier, when Karl Marx and Friedrich Engels had issued their *Communist Manifesto.* This potent propaganda pronouncement had offered high standards of living and freedom from oppression and discrimination to all the workers and races of the world.

On Sept. 5, 1949, according to the Associated Press, Harold MacMillan, British conservative, read to the European Consultative assembly at Strasbourg, Fr., a memorandum which he said Winston Churchill had sent to the British war cabinet in Oct. 1942, urging the unification of Europe as a barrier against "Russian barbarism."

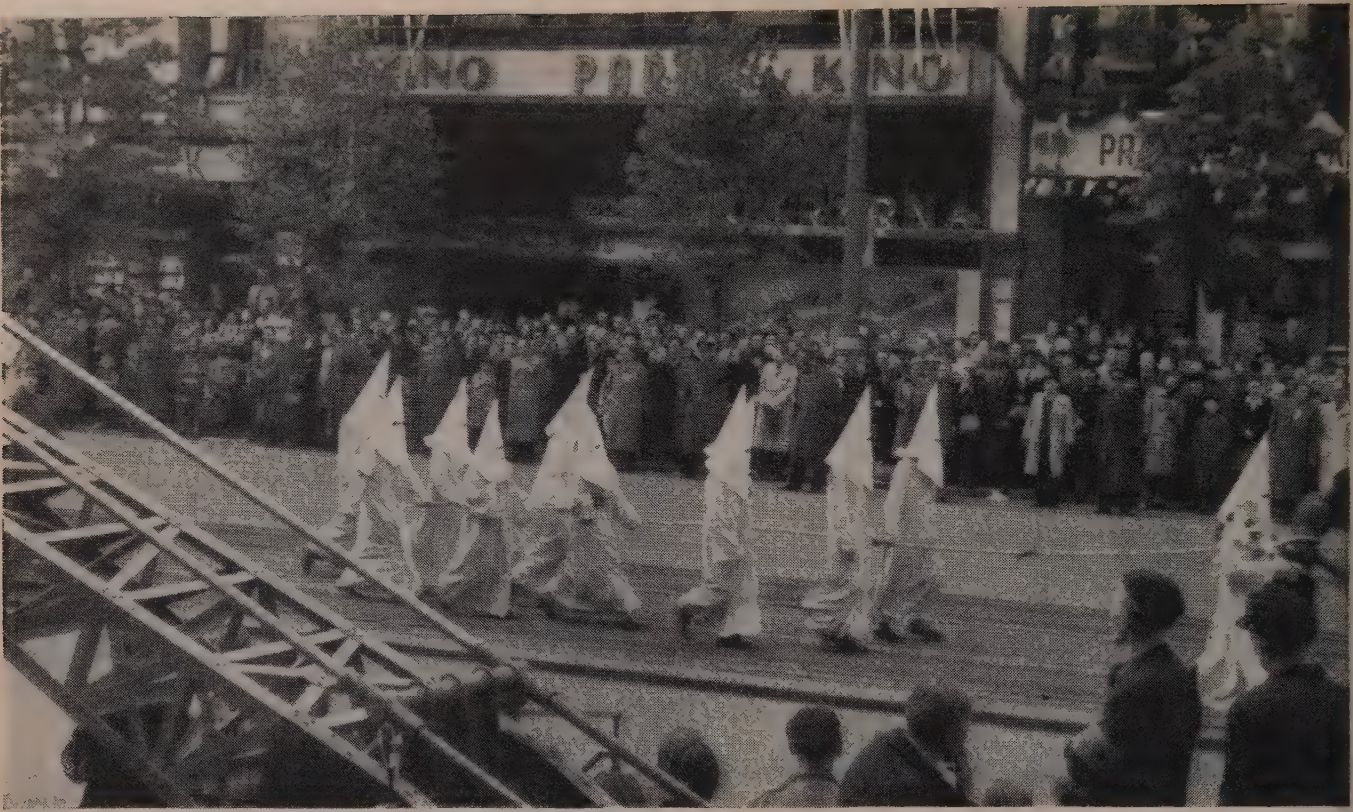
"Cold war" allies and *de facto* allies of the Soviet Union in 1949 included the new Communist states of eastern Europe (with the exception of heretical Yugoslavia), eastern Germany, Communist China and north Korea, Communist parties throughout the world and the Russian Orthodox Church.

Allies and *de facto* allies of the United States included Great Britain with its Socialist government; the capitalist nations of western Europe, including western Germany, and the Vatican state which, through the Roman Catholic Church with its 400,000,000 members, was especially powerful in the ideological war, for it was able to influence policy making in the U.S. and its allied nations, and to disseminate counterpropaganda in the new Communist states.

Both the U.S.S.R. and the United States had effective propaganda machines. That of the U.S.S.R. was described in Nov. 1949 by Gen. Walter Bedell Smith, former ambassador to the Soviet Union, as follows: "For an American to appreciate the volume and effect of Soviet propaganda, it is necessary for him to remember that the government owns and controls *all* media of information—newspapers, books, magazines, radio, ballet, theaters, motion pictures and . . . television. The government uses these media without limitation to create and change public opinion, both at home and abroad, and to these have been added . . . all media of information in the satellite countries. . . . The vast propaganda machine, since the Spring of 1946, has made the United States and Great Britain in particular and Western civilization in general, the object of a campaign that in viciousness and intensity is without parallel in time of peace. As directed against the United States . . . we are depicted as the virtual heirs of what the Soviet propagandist calls 'the maddened, rapacious Fascist beast.'" (*My Three Years in Moscow,* J. B. Lippincott Company; published also by William Heinemann, Ltd., London, Eng., as *Moscow Mission 1946–49.*)

Within Russia, General Smith wrote, the Kremlin's propaganda offensive was devoted largely to destroying the reservoir of good will for the United States that was created in the Soviet Union during the war and the long-standing admiration felt by the Russian people for U.S. industrial and scientific progress.

By the close of 1949 the anti-Communist propaganda machine



SAMPLE of the propaganda used by Communists in Czechoslovakia in 1949. Hooded Klansmen are shown holding a Negro in chains (extreme right) during a political parade staged to illustrate life in the United States

in the United States approached that of the Soviet Union in efficiency of dissemination, in name calling and in political acts calculated to inspire fear, ensure conformity and prevent counterpropaganda. It had the co-operation of all the major news services, most of the newspapers, all of the major broadcasting companies, the motion-picture industry, the chamber of commerce of the United States, the American Federation of Labor and the Congress of Industrial Organizations, veterans' organizations, most schools and universities and the Roman Catholic Church. To the media available in the United States had been added those of the Marshall plan and North Atlantic treaty nations.

Within the United States, propaganda efforts were likewise devoted to destroying the reservoir of good will for the Soviet Union created in the U.S. during the war. The attorney general of the United States was authorized to make public the names of organizations he considered subversive. In June 1949 the Educational Policies commission of the National Education association declared that all Communists should be excluded from employment as teachers; in Oct. 1949 Japan was purging teachers charged with being "red" at the behest of the United States. Propaganda to discredit the Roosevelt administration and the Yalta agreements for soviet-United States postwar co-operation continued through the year. In December radio commentator Fulton Lewis, Jr., charged that in 1943–44 Harry Hopkins, with the help of Henry A. Wallace, had shipped uranium to the U.S.S.R. This was but another incident in the "cold war" record of spy hunts, purges and political trials, and diplomatic "tough talk." Political trials which had served the Soviet Union for years as propaganda weapons were frequent and spectacular in 1949. For example, in the United States 11 leaders of the Communist party were convicted of having conspired to teach and advocate the overthrow of the United States government; and Alger Hiss, state department official in the Roosevelt administration, was being tried in December, accused of having sworn falsely that he was not a Communist, had not given secret documents to Communist spies. (Hiss was convicted in Jan. 1950 and sentenced to five years' imprisonment. The verdict was appealed.)

In Communist China, U.S. consular representatives were imprisoned, tried on vague charges and ordered deported. In Hungary Laszlo Rajk, the former premier, received the death penalty for plotting with foreign agents, and Joseph Cardinal Mindszenty, charged with treason, received life imprisonment. Trials of Catholic priests and church dignitaries in eastern Europe to curtail Vatican influence in government and education were a prelude to the Vatican's decree of excommunication, issued July 13, 1949, against Catholics who became Communists or who aided communism. On Nov. 17, addressing members of the U.S. senate military appropriations committee, Pope Pius XII supported the U.S. arms program for western Europe and singled out the Soviet Union as responsible for the fear of war.

In neither the United States nor Great Britain was approval of the "cold war" unanimous. The *Wall Street Journal* saw in the huge arms program of the United States a parallel to Hitler's guns-instead-of-butter economy. James P. Warburg, U.S. economist, urged reduction of military expenditures and advocated that communism be stopped not by trying to contain it by physical force, but by promotion of economic recovery and social justice. The American Society of Friends made public a study of U.S.-soviet relations with suggestions for peaceful settlement of differences. U.S. publicists Scott Nearing and Lawrence Dennis, differing widely in ideology, saw exploitation of the fear of communism and Russia as a propaganda device for making "welfare states" of both Britain and the United States, after the pattern of Germany's national socialism.

U.S. church groups who were alarmed by the growing influence of the Roman Catholic Church, particularly in education and in the making of national policies, in 1949 completed organization of Protestants and Other Americans United for Separation of Church and State. The American Civil Liberties union in its 1949 report declared that the "cold war" and its propaganda had placed civil rights in greater danger than at any other time in the 29 years of the union's existence.

Citing the mounting hysteria, Robert M. Hutchins, chancellor of the University of Chicago, said in a convocational address: "We ought to be afraid of some things. We ought to be afraid of being stupid and unjust. We are told we must be afraid of Russia, yet we are busily engaged in adopting the most stupid and unjust of the ideas prevalent in Russia, and are doing so in the name of Americanism. The worst Russian ideas are the police state, the abolition of freedom of speech, thought, and association and the notion that the individual exists for the state." Hutchins added that labelling a thing or a person Communist because Communists happen to favour it or agree with him involves the negation of thought of any kind.

In England, in March 1949, complaints were being made against the dean of Canterbury, Hewlett Johnson, for advocating friendly relations with the U.S.S.R. The archbishop of Canterbury, Geoffrey Francis Fisher, when asked why he did not remove the dean from his post, said: "In this country we greatly value the right of freedom of speech. . . . Its suppression is one of the grave charges against those totalitarian and police states which enjoy the Dean's confidence."

By autumn of 1949 it appeared that "cold war" propaganda was not likely to "contain communism" or end capitalism, and that a "hot war" threatened catastrophe to west and east alike, what with the Communist victories in China and the U.S.S.R.'s probable possession of atomic weapons and bacteria bombs. Anne O'Hare McCormick, writing in the *New York Times*, declared that the real "iron curtain" was the profound distrust that existed between the U.S.S.R. and the western powers; that the one way to prevent war was "to create a modicum of confidence between the two big powers."

Neither Russian nor U.S. propaganda was creating that confidence. "Letter from Warsaw" in the *New Yorker* magazine of Oct. 22, related that the "Voice of America" broadcasts offended both Communists and non-Communists. James Reston, Washington, D.C., correspondent, wrote in the *New York Times* of Oct. 27 that the blunt language of U.S. diplomacy was sounding slightly "like a stuck whistle."

Most Communist propagandas seemed equally ineffective in the United States.

One Communist propaganda, however, that advocated that people in nations everywhere follow the Soviet Union's example in ending racial discrimination was not increasingly effective the world over—not primarily because it was soviet propaganda, but because it was Christian doctrine and soviet practice. U.S. failure to end the disparity between its preachment of "liberty and justice for all" and its practice with respect to racial discrimination was widely utilized by the Soviet Union. Such events as the Peekskill riots of Sept. 1949 were publicized by Communists (and by many non-Communists) to reveal a major U.S. weakness. To meet such propaganda, President Truman had repeatedly asked congress to adopt a civil rights program. Congress adjourned until 1950, with no action taken. Meanwhile, however, local programs to end discrimination on the basis of racial or religious difference, such as the one evolved by a group of eminent U.S. educators in Springfield, Mass., during the war years, were being adopted in communities throughout the United States. One effect of anti-Communist propaganda in the United States which linked the names of respectable and influential citizens of high prestige to Communist fronts, real or alleged, lay in the fact that Communists could point to the association with soviet ideals of many eminent Americans. This represented prestige by association (prestige for the Communists), as well as guilt by association.

FILMS OF 1949.—*Propaganda Techniques* (Coronet Instructional Films). (C. R. MR.)

Protestant Episcopal Church.

The most significant event in the history of this church during 1949 was the meeting of the general convention, its supreme legislative body, which convenes once every three years. The outstanding action of this convention was the authorization of a budget for the National council (the executive body), totalling $5,500,000 per year for the ensuing triennium, of which $500,000 was for world relief. To this latter cause the church had given more than $1,000,000 per year, or a total of $3,500,000, for the triennium ending in 1949.

The budget authorized in 1949 represented an increase of $2,000,000 per year. Most of the increase was to go to the overseas department, which supported missionary work in 27 dioceses and districts located in 19 countries; to the home department for domestic missions; and to the department of Christian education. The work of the church throughout Latin America had grown steadily, as illustrated by the fact that in southern Brazil the one missionary district was divided into three, each having its own bishop.

According to the *Living Church Annual, 1950*, the church during 1949 broke several records: church members (all baptized persons), 2,512,265; communicants, 1,671,366; confirmations, 80,021; clergy, 6,547; postulants (those listed by the bishops as desiring ordination), 1,079; lay readers, 5,537; and total contributions, $69,311,977, an increase of $8,200,000 or 13.4%.

Church schools, with 56,641 teachers and 489,423 scholars, increased 6.28% over the preceding year, but had not yet regained their prewar enrolment of 60,000 teachers and 500,000 scholars. Marriages declined (33,667 in 1949 compared with 35,233 in 1948) as did baptisms (104,928 in 1949 compared with 110,618 in 1948).

In spite of having the largest number of clergy in its history, the church was still shorthanded. Parishes and missions increased from 7,864 in 1948 to 7,909 in 1949. However, the theological seminaries were unable to accept all applicants, indicating a still further increase in the number of clergy and the likelihood of the church's being better able to meet in the near future the trend toward expansion. (*See* also CHURCH MEMBERSHIP.) (W. H. SE.)

Protons: *see* PHYSICS.
Prunes: *see* FRUIT.

Psychiatry.

A distinct trend in psychiatric thought was seen to develop in 1949, culminating in the awarding of the Nobel prize to two pioneer investigators in the field of physiologic psychiatry. Although emphasis was still placed by most psychiatrists on the psychologic interpretation of mental abnormalities, much of the scientific work of the year was concerned with the basic physical and biochemical reactions of the brain. It was widely recognized that psychologic phenomena ultimately must be based on such reactions, and that if further advancements were to be made they would be along the lines of the physiologic explanation of the function and chemistry of the brain cells and their appendages. Otherwise, psychiatry might tend to become exclusively a field of conflicting philosophic opinions forming a barrier to prevent progressive development much to the detriment of the subject in general. Thus, to put psychiatry and psychodynamics on a firm structural foundation, attention was focused on a balanced program of all inclusive research into the physical causes of mental disease.

Scholars pointed out that with the gradual increase of scientific knowledge the number of mental disorders formerly classified on a functional basis was steadily decreasing. W. B. Terhune estimated that in the standard classifications of 1949 at least three-fifths of mental abnormalities were now accepted as being organic in origin. Many psychoses formerly thought of as functional were attributed to infections, intoxications, trauma, circulatory disorders, convulsive states, faulty metabolism, nutritional disorders, or defects in glandular secretion. Other physical factors were found to influence the psychoneuroses, such as semistarvation or avitaminosis. These causes were particularly potent in colouring the mental state of former prisoners of war and displaced individuals from overrun countries. Many childhood disorders were also shown to be of a physiopsychic nature, and realization came to psychiatrists that psychologic explanations for abnormal behaviour of children as well as adults were not entirely satisfactory without an added evaluation of genetics, constitution and bodily disease processes. Psychiatric illness, like other diseases, began to be recognized as fundamentally structural, psychodynamics describing but not explaining mental disorders. Psychotherapy was thought to be only one way of influencing the physiology of the nervous system; the treatment of bodily disease was considered equally important. Terhune went so far as to conclude that all mental disorders resulted from a disturbance in the normal physiology of both the psyche and the soma with resultant pathologic processes, the whole being greatly influenced by disturbing evironmental factors.

Some of the principal investigations on the function of the brain were carried out by W. R. Hess of Zurich, Switz., a physiologist, winner of one-half of the Nobel prize in medicine for 1949. Hess's later researches had been largely centred on that part of the brain known as the diencephalon, or midbrain, lying on the base of the skull and thus particularly inaccessible to the neurosurgeon. Investigations therefore were confined to animal experimentation. He found that in the diencephalon were grouped nerve cells which have to do with co-ordinating the harmonious interplay of all the organs of the body through the autonomic nervous system. Based on his previous studies of circulation and respiration, Hess re-evaluated the physiologic importance of the diencephalic nuclei as a brain centre of vast usefulness. Of the two divisions of the autonomic nervous system, the sympathetic section appeared to play a decisive part in preparing the individual for activity, while the other section, known as the parasympathetic system, was of importance in relation to economy of action and repair of structures. Both of these divisions, under the control of the nervous central exchange in the diencephalon, exerted their influence both in the psychic field as well as on the bodily organs. By artificially disturbing the equilibrium of the diencephalic nuclei in his animals Hess was able to dampen sympathetic control without interfering with the activity of the parasympathetic centres. Under these conditions, instead of preparing the animal for activity, artificial sleep was produced, thus allowing for better economy and repair through the relaxing of the parasympathetic influence. Psychiatry was therefore furnished with a concrete example of the fact that influences stemming from the diencephalon exerted an influence in activating the psychic function of sleep. Previously the cortex of the brain, the supposed site of the mind, was considered as fundamentally dominating and controlling all bodily processes, a one-way pathway from cortex to lower centres. From the investigations of Hess conclusions were drawn that the co-ordinating centres in the brain stem might in turn influence the psychic functions. These observations were considered by many as fundamental to the concept of physiologic psychiatry. What previously had been suspected in regard to the effect of vegetative processes by way of the autonomic system regulating the activities of the higher cerebral functions was confirmed.

The work of Egas Moniz of Lisbon, Port., was also recognized by the awarding of a Nobel prize. His work, also based on physiologic experimentation, dealt with the relation of frontal lobes, the area of the brain partially concerned with the highest mental processes, to the other parts of the brain. A radical surgical procedure, cutting the connecting pathways, was devised and applied to man. First announced in 1936, this operation, later known as prefrontal lobotomy, had been performed extensively since that date in all advanced centres of psychiatry throughout the world. The evidence presented in 1949 would indicate that the operation, now modified into various patterns, had opened up a whole aspect of brain function and greatly affected psychiatric thought. Psychosurgery, as the whole subject was now designated, is now accepted as a form of treatment, greatly to the betterment of patients with the more serious and prolonged types of mental aberration. Much work on the subject still remains to be done, for the selection of cases most favourable for lobotomy still was considered by most psychiatrists as a puzzling and unsolved problem.

T. O. Caspersson also indicated by his studies on the chemistry of brain cells the answer to some of the most perplexing problems in psychiatry. With the aid of an ultra-violet spectrophotometer he was able to study the protein material within a nerve cell and found a close relation between the function of a cell and its protein formation. Examination of cells from the frontal lobes of persons subjected to the operation of prefrontal lobotomy revealed a decrease in protein substance in those patients who had suffered from severe mental disease. This led to the treatment of certain psychoses, particularly the depressed patient, with stimulants of protein metabolism, such as malononitrile and sodium thiosulphate, with encouraging results. Although still in the experimental stage of investigation, the work of Caspersson was considered provocative and worthy of further research. (*See* also PSYCHOLOGY; PSYCHOSOMATIC MEDICINE; PUBLIC HEALTH SERVICES.)

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Psychology.

D. O. Hebb's *Organization of Behavior* attempted to restate some of the facts of psychology in terms of modern physiological theory about the brain. It had been somewhat unfashionable for two decades to talk about the relations of the nervous system to behaviour, and much was written about a science of psychology independent of physiology. Hebb was one of a number who returned to an interest in neurological theory as a source of hypotheses about complex processes like thought, expectation, attention, interest, consciousness and memory. The book starts with the recognition of a number of puzzling facts, such as the observation that great areas of the cerebrum in adults may be damaged or removed without interfering with certain intellectual functions. The neurological theory developed attempts to incorporate this sort of fact as well as the psychological evidence on learning, motivation, emotion, perception, intelligence, thinking and concept formation. The theory assumes that learning consists in structural changes in central relationships between cerebral neurons or between systems of neurons of varying complexity. The growth of a concept involves the gradual organization of many neural cell assemblies or complicated circuits. Extensive brain tissue is necessary for the initial establishment of these assemblies but with time and experience there is short circuiting and some of the assemblies originally involved are no longer necessary. Hebb postulates that for this reason brain damage may be relatively less severe in its effects on adults than on children. The theory is also compatible with such facts as the extreme slowness with which adults, recovering from congenital blindness, learn to distinguish objects like squares and circles. The cell assemblies involved have to be organized and this takes time.

Experimental evidence continued to pile up in 1949 on the problem of learning, though none as yet made possible a decisive choice of principles which hold in all learning situations. Several papers during the year, including one by E. C. Tolman, accepted the familiar notion that there may be a number of different learning principles which operate in different types of learning situations. Tolman stated, for example, that need reduction may be essential in learning what objects satisfy a need. So the reduction in hunger by eating certain foods may be the basic factor in learning what food satisfies hunger. On the other hand, he believed that Gestalt principles of organization are of prime importance in acquiring expectations or in learning how and by what means goals are reached. But, it was suggested, the learning of motor skills or motor patterns, like writing movements, may rest simply on the association of stimuli and movements which have occurred together in the past.

The most important event of the year in the field of social psychology was publication of the first three volumes of the projected four volume series, *Studies in Social Psychology in World War II,* based on the work of the research branch of the war department from 1941 to the end of the war. Most of the studies were designed to meet practical wartime demands, and the writers were fully aware of the consequent limitations of the information for the purposes of scientific generalization. Nevertheless, they extracted from interviews with more than 500,000 U.S. soldiers observations of the greatest importance for the historian, for those concerned with administrative problems and for the social scientist. The first of the volumes summarizes the problems of personal adjustment to institutionalized army life. The second deals with combat and its consequences and the third reviews experimental studies of the impact on the soldier of educational and indoctrination films. The attitudes of the educated soldier are compared with those of the uneducated, those overseas with those at home, those with good chances of promotion and those with poor chances. Adjustment is traced in relation to background characteristics such as age, marital status, education, maternal overprotection, etc. Job efficiency is examined in relation to the soldier's views about his position and his opportunities to choose his own job. A whole chapter is devoted to the problems of the Negro soldier. Fear in combat and the army's attempt to cope with this problem are analyzed. The motion picture and other techniques of giving information and changing attitudes are evaluated. The final volume, scheduled to appear in 1950, examines the fundamental concept of attitude and the contributions of the research branch to methods of attitude measurement.

Following the failure of the commercial public opinion polls to predict correctly the outcome of the 1948 presidential election, there was much interest in the reasons for this debacle involving the use of a tool which social psychology and other social sciences had begun to rely on extensively. A committee of experts was set up by the Social Science Research council to examine the available information about the polls and the election and to discover the sources of error. It was concluded that two major difficulties were involved: (1) errors of sampling and interviewing; and (2) errors of forecasting, which involved a failure to assess the future behaviour of undecided voters and to detect shifts of voting intention near the end of the campaign. The errors of sampling and interviewing could be reduced by newer methods, but reduction of error at other points depended on further basic research in psychological and political behaviour. It was noted that the public was misled regarding the accuracy of the polls by the manner in which results were analyzed and published. There was nothing in the situation to warrant disparagement of properly conducted sampling surveys.

A whole issue of the *Journal of Consulting Psychology* was devoted to the report of one of the very few systematic attempts ever made to evaluate psychotherapy. A group under the direction of Carl R. Rogers described six studies of the therapeutic process, including careful and objective analyses of attitudes towards the self, the relation of self-acceptance to acceptance of other people, the way in which insight develops, changes in the maturity of behaviour and changes in expressions of defensive behaviour. Though the number of cases was small and there was no comparison of the group receiving therapy with a similar group given no therapy, this honest attempt to record interviews, define concepts and check the amount of agreement on observations promised to be the beginning of a healthy departure from the usual unscientific evaluations of treatment. The status of psychotherapy was well summarized by Hebb: "It seems generally believed that the validity of psychoanalytic theory is well established by the fact that it has led to curing mental illnesses that would not otherwise have been cured. If one looks for the evidence, however, one cannot find it. . . . There is no body of fact to show that psychotherapy is valuable." (From D. O. Hebb's *Organization of Behavior*, John Wiley and Sons, Inc., 1949.) These first efforts of Rogers to subject his methods of nondirective therapy to scientific test constituted a landmark for clinical psychology.

The last book written by Sigmund Freud was published in English during the year, under the title *An Outline of Psychoanalysis*. In this small volume are brought together the principal doctrines of psychoanalysis as Freud saw them at the end of his career. Selected writings of E. L. Thorndike, based on papers dating from 1913 to 1946, were published in one volume during the year. (*See* also PHYSIOLOGY; PSYCHIATRY; PSYCHOSOMATIC MEDICINE.)

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Psychosomatic Medicine.

Physicians, nurses and social workers occupied in tuberculosis sanitoria had frequently observed the high incidence of neurosis in patients suffering from this disease. Studies published on emotional factors in tuberculosis had generally dealt with only a few case reports, the observations of social service workers, or general comments by physicians untrained in psychiatric techniques. In 1949, however, a study by Eric Wittkower of 785 patients observed over a period of two and one-half years, provided much useful information concerning the role of emotional factors in tuberculosis. The views expressed did not clash in any way with those held by tuberculosis specialists, who had long known that an unhealthy mode of life and mental upsets often preceded the onset of symptoms of tuberculosis. But, going beyond these observations, Wittkower made an attempt to explain how this unhealthy mode of life came about, what formed the basis and what were the common features of the precipitating mental upsets.

He showed that an inordinate need for affection was an outstanding common feature of the premorbid personality of tuberculosis patients; this need might be openly expressed, thinly disguised, well concealed or flatly denied. Situations arousing aggressiveness or endangering the delicately poised security system of the patients often preceded the onset of symptoms of tuberculosis.

In brief, people developing tuberculosis seem to have a frequent inability to deal adequately with their aggressive impulses and were prone, for varying reasons and in different ways, to turn them against themselves.

W. A. Tillmann and G. E. Hobbs made a study of the psychiatric and social backgrounds of the accident-prone automobile driver. Dealing chiefly with taxi drivers, they discovered that the high-accident group showed a marked intolerance for, and aggression against, any authority, and that this behaviour dated from early childhood. The origin of the aggression was found in an unstable home background and showed up in antisocial behaviour. Analyzing 96 drivers from the general population who had had four or more accidents and comparing them with a control group of accident-free drivers, they found that 66% of the high-accident group were known to social and law enforcement agencies as compared with only 9% of the control group. Commenting upon the question of the selection of drivers by personnel managers, they stated that safe driving depended more on judgment, caution and consideration of the possible errors of others, than upon reaction time and binocular vision. They added that any intelligent personnel manager could learn to take the kind of life history necessary to detect the unstable person who is prone to get into accidents.

It became increasingly clear in 1949 that psychiatry has an important relationship to industrial medicine. G. A. Eadie described his method of handling psychosomatic problems indicating that the surface complaint is not the same as the latent complaint and that one must look into the details of the latter.

Eadie emphasized that interest in emotional factors must not lead to neglect of possible physical factors, and mentioned a number of problems such as multiple sclerosis, Parkinson's disease, hyperthyroidism and anxiety attacks that may contribute to disability and be responsible for industrial accidents.

With new discoveries regarding the role of the sex organs as producers of hormones (and the isolation and synthetic production of these hormones) biologists believed that a simple explanation of sexual behaviour and a simple treatment of abnormal sexual behaviour were at last available. But the simplicity of this explanation had already been questioned by animal experimentation which suggested that subcerebral mechanisms capable of mediating sexual responses had become more dependent upon the higher nervous system, and that the development of this increasing dependence on the cerebral cortex had to some degree freed the more primitive sexual mechanisms from strict control by gonadal hormones.

W. H. Perloff questioned this simple explanation in 1949 as far as the human being was concerned. He stated that three elements have to do with human sexuality. The first is the genetic factor which predetermines the particular type of sexual pattern and is constant within limits for any one species. The second factor is the hormonal one which leads to the development of the organs needed for the sex act and increases their sensitivity to stimulation. But the third important factor is psychological and this is concerned with the choice of the sex object and with the intensity of the sexual emotions. (*See* also Medicine; Psychiatry; Public Health Services.)

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Public Assistance: *see* Child Welfare; Relief; Social Security.

Public Buildings Administration: *see* General Services Administration.

Public Health Engineering.

World shortages of water in 1949 represented a continuation of the difficult experiences of the winter of 1947–48. In many countries the high summer temperatures and rainfall deficiencies of 1949 heightened the problem. Perhaps the most significant evidence of this difficulty was the shortage in the New York metropolitan area, still persisting by the end of the year. With the largest water consumption in the world, somewhat more than 1,000,000,000 gal. a day, the New York area found itself with storage to carry over only 60 days, if the low rainfall conditions of the fall continued during the early part of 1950. Less than 35% of the potential capacity of its storage reservoirs was available by the end of the year. The spectacle of a utility serving more than 8,000,000 people attempting to conserve a dwindling supply by resorting to curtailment of accepted modern uses of water was not a happy one.

The situation was paralleled along the entire Atlantic seaboard of the United States, while in Britain municipal customers were warned of the necessity for drastic curtailment of water use. Conditions in France, Switzerland and South Africa were similarly acute. It was rare that water shortage, with its concomitant climatic and meteorological causes, should prevail over such a large part of the world.

The importance of this phenomenon could not be overestimated, since it pointed to the necessity for setting planning stakes many years ahead in the provision of water supply.

Reminders of ever-present environmental hazards also appeared during 1949 in an outbreak of typhoid fever in France, aggregating some 280 cases at St. Etienne. The exact origin of this environment-borne disease had not been determined by French authorities at the end of the year.

Further light was shed during 1949 on the possible cause of endemic and epidemic paratyphoid fever, food poisoning and acute diarrhoea of children under two years of ago. Australian investigators disclosed that babies are carriers particularly of the salmonella group of organisms. The findings might give a clue to the mysterious hospital epidemics of very young babies, under conditions of crowding and cross infection in nurseries. The infant carrier rate of salmonella infections was thought to be as important in the community as typhoid and dysentery carrier rates in older persons.

The rapid expansion of the nuclear fission industry resulted in the development of new radioactive materials and wastes. There was rapid progress in the understanding and detection of liquid, solid and gaseous wastes from the atomic energy industry in Great Britain and the United States, and the methods for reducing these wastes. Much research was in progress to develop and improve methods and instruments for detecting radiation in air and in water.

The addition of fluorides to public water supplies for the prevention of dental caries in children was still arousing a great deal of lay and official interest. By the end of 1949 about 17 fluoridation installations were in operation in nine states in the United States. Fourteen additional ones had been approved, and 20 more were under consideration.

CITY INSPECTORS grading smoke density in Pittsburgh, Pa., in 1949, by matching it with shades ranging from light gray to black on a Ringlemann chart (left). Violators of smoke-abatement rules were subject to fine

Further research on the effect of the addition of fluorides to water was planned in view of the fact that in New Mexico objectionable fluorosis or mottled enamel of the teeth had resulted from the presence of as little as 0.7 p.p.m. in the water supply. One part per million had been normally considered to be protective of the teeth. The fluoridation of one water supply, at Charlotte, N.C., appeared to result in a serious increase of cracking in ice manufactured from the treated water.

Home accidents received more attention from official preventive health agencies. Accident proneness was being recognized as an attribute of the disturbed personality and of the impaired physiology of the individuals. The correction of unsafe conditions of environment, however, was an essential ingredient of successful accident prevention. In 1949 almost 100,000 persons were killed in all types of accidents, and more than 10,000,000 received disabling injuries. Accidents ranked fourth as a cause of death in the United States and home accidents first in the accident category.

The eradication of insect-borne diseases by use of DDT and other engineering techniques moved forward in Latin America, Egypt, Sardinia, Italy, India and other places. Even if susceptibility of mosquitoes and flies to DDT gradually declined, there was hope that newer synthetic chemicals would provide continuing opportunities for eradication and control.

The relation of nitrate nitrogen concentrations in well waters to the occurrence of methemoglobinaemia in infants was being increasingly demonstrated and studied in the United States. A detailed review was issued by the Minnesota state department of health, and other states were watching this new water-borne disease with increasing interest. Further study of the significance of high nitrate nitrogen content of water was obviously required. It was equally apparent that health authorities should view with suspicion waters from private household well supplies having nitrate nitrogen contents in excess of 10 p.p.m., where such water was to be used for infant feeding.

Baltimore, Md., became the first U.S. city in which the courts held the federal government responsible for permitting insanitary conditions to exist in a public housing project which resulted in a number of cases of typhus fever and several deaths of murine origin. On the basis of this principle of responsibility by a landlord for environmental conditions, damage suits were instituted by the survivors of those who died.

The Donora, Pa., experience with heavy atmospheric pollution in 1948 led to extensive studies of this problem in various parts of the United States and Great Britain. The report released by the U.S. public health service in 1949 on the Donora experience was perhaps one of the most comprehensive reviews on record of such a catastrophe. Research in the Los Angeles, Calif., area on the unusual conditions of smog which had existed at frequent intervals over this territory for the preceding eight or nine years provided additional basic information on an environmental problem of increasing importance in industrial areas.

The Expert Committee on Environmental Sanitation of the World Health organization, which met in Geneva, Switz., in Sept. 1949, released its report on "Environmental Sanitation in the World Today." It proposed a detailed program of eliminating, on a progressively increasing basis, those diseases upon which environmental sanitation might make its greatest impact.

The report of a comprehensive survey of Iran, by a group of engineers and medical experts, represented one of the rare diagnoses of an entire country. The high priority accorded the development of water supplies and other environmental features of public health was another distinguishing feature of the report. (*See* also Child Welfare; Epidemics; Industrial Health; Public Health Services.) (Ab. W.)

Public Health Services.

The control of chronic diseases of later life was becoming an ever-increasing public health problem in 1949. Authorities agreed that programs for the control of such illnesses should include:

1. Widespread early case-finding services, especially examinations for early and precancerous lesions, diabetes, high blood pressure, heart disease, kidney disease and arthritis.
2. Facilities for chronic disease care, with major emphasis on home and hospital care, associated with medical centres and medical schools.
3. Provision for the rehabilitation of chronically ill patients.

Diseases of the Heart and Circulatory System.—Diseases of the heart and blood vessels continued to be the most important health problem. Congenital heart disease, however, was a relatively small factor of the total problem, and syphilitic heart disease, with modern antibiotic treatment of syphilis, was decreasing measurably.

The relation of streptococci to rheumatic fever was not yet established, although authorities believed such a relationship probably existed. Epidemiological control of streptococcal infections was a promising avenue of approach, and the use of sulfa drugs after an initial attack of rheumatic fever, the use of penicillin before and after extraction of teeth and operations about the nose and throat, and the treatment of bacterial endocarditis by penicillin yielded encouraging results.

Nutritionists and biochemists produced evidence during 1949 suggesting that obesity and a high blood content of cholesterol are associated with coronary disease, and that a saltless diet may be of material value in checking the development of hypertension. Treatment of victims of coronary heart disease with dicumarol yielded encouraging results and several serious malformations of the heart in children could be corrected by surgery. (*See* also Heart and Heart Diseases.)

Diabetes.—Diabetes control had become a community, as well as an individual, health problem. Current knowledge indicated that there was hereditary susceptibility in diabetes, that a high incidence of obesity was usually found as a forerunner of the disease, and that acute infections, or exacerbation of chronic infections activated the disease. Early detection, prompt referral to a physician for competent treatment and thorough education of the diabetic patient and his family constituted important components of diabetes control in the individual and the community. (*See* also DIABETES.)

Rh Factor.—Stillbirths and certain types of fatal anaemia in newborn infants may be due to the sensitization of a pregnant woman to the blood cells of her unborn child. This condition is due to the absence in about 15% of the population of a substance known as Rh factor. Women who do not have the Rh factor in their blood may develop certain substances in their blood during their first pregnancy which, on subsequent pregnancies, may damage the infant's blood, resulting in a certain number of cases of anaemia or even death of the infant.

To help discover this 15%, many physicians in 1949 were making routine tests of the blood of pregnant women for the presence or absence of the Rh factor. Some health departments were providing such laboratory service to the public in order to meet the problem.

Poliomyelitis.—In a carefully controlled and detailed survey of cases of poliomyelitis occurring in Chicago, A. E. Casey, W. I. Fishbein, F. N. Schabel, Jr., and H. T. Smith showed that poliomyelitis was highly contagious and extremely common in that city.

By means of virus studies on throats and stools, as well as by a determination of neutralizing antibody response in a series of contacts to cases of poliomyelitis, and immediate vicinity noncontacts and remote control groups, these investigators were able to calculate that in an average year there were from 100,000 to 125,000 cases of poliomyelitis in Chicago, or 3% to 4% of the total population. They also calculated that most children in Chicago had probably had poliomyelitis once by the fourth birthday, and 75% perhaps twice by the sixth birthday, either from different strains of virus or reinfection of a similar type of virus.

This study appeared to offer additional evidence that poliomyelitis is a very common contagious disease, and that it is only the exceptional case that attains sufficient severity to permit clinical diagnosis. (*See* also INFANTILE PARALYSIS.)

Tuberculosis.—During 1949 it was reported that the proportion of deaths from tuberculosis (*q.v.*) among people over 45 years of age was steadily increasing. An important factor in this shift from younger to older age groups was that tuberculosis rates had declined more slowly in the latter group. The increasing age of the population as a whole also accentuated the degree of change.

Public health authorities agreed that older people were a major source of infection in the population. Special efforts were needed to discover the disease for the protection both of individuals and of the community. (*See* also EPIDEMICS; FEDERAL SECURITY AGENCY; INDUSTRIAL HEALTH; MEDICINE; NUTRITION, EXPERIMENTAL; VENEREAL DISEASES.)

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(H. BU.)

British Commonwealth.—1949 was the first full year during which the National Health Service act of 1946 operated. Of the population 95% had registered with general medical practitioners under the scheme. Although a large proportion of doctors in general practice accepted service under the scheme, patients were sometimes delayed in obtaining treatment owing to the shortage of doctors; and there were complaints of overwork in the profession. There was evidence that some people were going to their doctors too readily and that the provision of free medicine was being abused by a minority of the patients. It was decided, therefore, that a charge of one shilling should be made for each prescription. There was some criticism of the service being available to foreigners. It was therefore decided that the provision of artificial limbs, dentures and other appliances or expensive treatment should not be available to persons coming specially to Great Britain for the purpose. Dental treatment was even more difficult to obtain than medical treatment because for some years there had been a great shortage of dentists in Great Britain. Under the new scheme the earnings of some dentists were considered to be excessive and revision of their fees was under consideration. In the school medical service dentists continued to be paid by salary and there was a tendency for this service to suffer since private practice became more attractive. The ophthalmic service was also carried on under some difficulty, particularly in the supply of spectacles, of which 5,000,000 were provided in the first year.

When the new scheme was introduced the British Medical association, acting for the profession, feared the possibility of the establishment of a state medical service. The National Health Service (Amendment) act, 1949, was accordingly passed to give a statutory guarantee that a full-time salaried service for general medical practitioners would not be introduced without special legislation. This act also met objections which had been raised to the operation of the main act in regard to partnership agreements.

The development of the health services received consideration in the dominions and particularly in Canada where during the year progress was made with the National Health program under which about $30,000,000 was to be made available by the dominion government to the provinces for the improvement of health services.

In India consideration was given to the indigenous systems of medicine, known as *Ayurveda, Unani,* etc., and a scheme in connection with the Employees Insurance act.

In Britain, because of financial stringency, it was possible to make only a small increase in hospital provision. There was considerable difficulty in obtaining hospital accommodation for the elderly sick. On the other hand, in some hospitals the accommodation for the sick was being used by ambulatory patients. Voluntary organizations (particularly the National Corporation for the Care of Old People and the National Old People's Welfare committee) in association with the medical profession were exploring the possibility of establishing rest homes to which such persons could be transferred. Similar problems were receiving attention in the United States and Canada. Economy of expenditure and restrictions on new building limited progress in the provision of health centres by local health authorities.

The estimated cost of the service for the financial year was £232,000,000 or about 2*s.* 1*d.* a person a week of the whole population.

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(JN. M.)

Public Housing Administration: *see* HOUSING.

Public Libraries: *see* AMERICAN LIBRARY ASSOCIATION; LIBRARIES.

Public Utilities.

From the point of view of legislation in the field of public utilities, the year 1949 was singularly unproductive. The only legislation potentially important was an amendment to the Rural Electrification act of 1936 which provided for the improvement and development of rural telephone service. The general aim of the program was to loan funds and give technical assistance to rural telephone utilities.

The administrator of the Rural Electrification administration was directed to authorize and make loans to utilities which provided, or which in the future might provide, telephone service in rural areas. Preference was to be given to existing agencies which provided service and to co-operatives or to nonprofit, limited dividend and mutual associations. The highest priority was extended to existing suppliers for the first year. Specifically, the purpose of the financing was the improvement, expansion, construction, acquisition and operation of telephone lines, facilities or systems. The loans must be repaid over a period of 35 years and were to bear interest at 2%. The amount of each loan was limited to 50% of the total capitalization of the borrower. To assure financial liquidity the REA must pass upon the physical condition of the property which was to be security for the loan together with the past revenues and prospective revenues available for interest payment and the annual amortization quota. Minor points to be considered were the extent to which REA guidance and help in managerial practices would promote efficiency, and the degree to which the community was interested in the project. This would make possible better forecasting of the quantity of subscriber use as well as of continuity of demand.

Chief among the legislative proposals during the year were those emanating from the Commission on Organization of the Executive Branch of the Government (Hoover commission). Although there were dissenting voices, the majority proposed that the department of the interior be divided into four major divisions: (1) water development and use; (2) building construction; (3) mineral resources; (4) recreation service. The first of these would be of primary interest to public utilities. Although it was rumoured that Herbert C. Hoover favoured converting the department into a department of natural resources, the changes suggested were to remain within the existing framework. Within the first division would be grouped the bureau of reclamation, the Bonneville Power administration, the Southwestern Power administration, the division of power—all these already functioning within the department—and the civil functions touching rivers and harbours improvement, which would be transferred with available personnel from the army corps of engineers. The purpose of the reorganization would be to eliminate conflicts and overlaps which were said to cost the taxpayers large sums annually. Contradictory and complex federal reclamation laws were likewise found to be in need of revision. With respect to independent regulatory commissions the Hoover report recommended integrating the Securities and Exchange commission with the Federal Power commission after the former's activities relating to holding company simplification and integration had been accomplished. It also recommended the transfer of the nonregulatory functions relating to river basin and power market surveys of the Federal Power commission to the department of the interior.

Mounting criticism was directed against the tendency of the federal government to regulate purely local affairs. A case pending in the United States supreme court concerned the jurisdiction which the Federal Power commission was asserting over the rates and service of the East Ohio Gas company. This company had been subject to regulation by the Ohio commission since 1911. It did not conduct an interstate business but sold gas directly to consumers in 69 different Ohio cities. But it had 112 mi. of pipe line extending to a point near the Ohio border where it received natural gas from an interstate transmission line company. The outcome of this litigation was being watched with extreme interest by the national association of state utility commissioners who feared further inroads by federal agencies into state regulation of this and other types of utilities.

The Wisconsin commission, which with the California commission was still permitting utilities to make a reservation for depreciation on a sinking fund basis, disapproved a 3½% sinking fund method as hitherto authorized for the Wisconsin Electric Power company. Henceforth, these reservations were to be made set up on a straight-line basis with a deduction for the accrued depreciation for rate-base purposes.

A significant happening in 1949 was the congressional appropriation of $2,500,000 to the Tennessee Valley authority to begin construction on a $37,000,000 steam plant at New Johnsonville, Tenn. This step was strenuously resisted by the organized private utility industry which had been successful in defeating a similar proposal in 1948. The management of TVA insisted that this expansion in steam capacity was necessary to firm up hydroelectric power and to supply much needed reserve capacity.

The Great Lakes-St. Lawrence seaway and power project once more received the endorsement of Pres. Harry S. Truman. The New York power authority, on the other hand, proposed that New York and the Canadian province of Ontario undertake the power project jointly. The formidable opposition to this joint navigation and power project appeared to be crumbling, with the Great Lakes shipping interests and the steel companies of the United States showing an interest in the seaway. The reason for the shift was the rapid depletion of the iron ore deposits in the Mesabi range and increased interest in the newly found deposits in Labrador. To make this ore supply available at cheap water transportation rates would require both the construction of a railway to tidewater and the improvement of the seaway in its lower reaches where the chief bottlenecks were located. (*See* also DAMS; ELECTRICAL INDUSTRIES; FEDERAL POWER COMMISSION; RAILROADS; RURAL ELECTRIFICATION; TELEGRAPHY; TELEPHONE; TENNESSEE VALLEY AUTHORITY.) (M. G. G.)

Canada.—The discoveries of great natural-gas pockets in Alberta brought gas utilities into prominence. Plans were discussed to overcome the political and economic difficulties in the way of piping Alberta gas to Pacific-coast Canadian and U.S. cities and into the Peace river area. New wells discovered in southwestern Ontario were helpful but did not prove large enough to offset the natural decline in old wells. A rise in the use of propane gas in various parts of Ontario and Quebec effectively supplemented such natural-gas shortages.

Some provincial developments of interest included: the Prince Edward Island public utilities commission undertook an inquiry into electric rates; Newfoundland took steps to create a commission to control all public utilities; Quebec announced a public services board to rule on questions concerning maritime transportation, waterworks, sewage systems; a Quebec court ruled that a private car owner who took fellow-workers to work did not infringe a bus company's franchise even though the workers contributed money to buy his gas; the Alberta public utilities board cut Edmonton milk deliveries to six per week, which was followed suit by Toronto, Ont. (C. Cy.)

Great Britain.—After its first year of operation, beginning on April 1, 1948, the British Electricity authority had completed its organization. The total installed generating capacity (at the end of September) of the B.E.A. and the North of Scotland Hydro-Electric board together was 13,564 megawatts, and the peak load carried during the winter 1948–49 was 10,163 megawatts. During the first year of operation (April 1948 to March 1949) the number of units sent out was 44,784,000,000, an increase of 10.5% on the total for the preceding year. The number of consumers was estimated to be 12,300,000. Plans for new generating capacity to be installed by the B.E.A., up to and including 1952, covered a total of 5,518 megawatts. Hydroelectric development in north Wales, including six major schemes to cost approximately £20,000,000 and with an estimated annual production of about 500,000,000 units, were approved in principle.

The annual report of the Electricity board for Northern Ireland showed that in 1948 the number of units sold rose to 179,830,000, an increase of 28% over the preceding year, and the number of consumers to 83,066, an increase of 6,690.

(E. W. G.)

The transfer of the gas industry from company and municipal enterprise to state ownership was effected smoothly on May 1, 1949, when under the Gas act, 1948, the property of 1,056 undertakings was entrusted to 12 largely autonomous area gas boards, which became responsible for the manufacture and distribution of gas, coke and products in England, Scotland and Wales.

The area boards in general found plants to be reasonably up-to-date and adequate, the works well managed, the distributing systems sufficient and the service to consumers good.

The price of gas in many localities was increased subsequent to nationalization, in order to relate prices to the costs of production. In Nov. 1949, compared with Nov. 1948, the average weekly production of gas increased by 600,000,000 cu.ft., and the average weekly consumption of coal at gasworks increased by 17,000 tons.

Compensation on nationalization was paid to the majority of gas shareholders during the year by the issue of 3% British gas stock, 1990–95. The value of most shares was determined by the stock exchange prices on the dates stated in the Gas act, or by agreement between the stockholders' representative of each undertaking and the ministry of fuel and power.

(J. R. W. A.)

The summer of 1949 in Great Britain was the driest after 1921 and the sunniest after 1933, and consequently numerous water undertakings experienced difficulty in maintaining a continuous supply of water to their consumers, and many found it necessary to introduce restrictions of the use of water. Citizens were compelled to use sea water for dishwashing and sanitation, and some even experimented with it for cooking purposes.

Not only in Great Britain but in Europe and in other parts of the world severe drought conditions were experienced. In Africa the effects were serious from the Cape of Good Hope to Kenya, and many government feeding schemes were introduced to avert famine.

The ministry of health continued to publish reports dealing with the water resources of various parts of the country to provide a basis of discussion which might lead to the improvement of water supply in those areas.

The first general assembly and congress of the International Water Supply association, set up in 1947 by delegates from Great Britain, France and the Netherlands, was held in Amsterdam, Netherlands, in September and was attended by delegates from about 20 countries. (J. Kd.)

Europe.—Under the European Recovery program an international program of power station construction and interconnection had been planned for western European countries. This covered the building of a total capacity of 2,800 megawatts to produce 7,700,000,000 units annually, including 13 hydroelectric projects in Austria, France, Italy, Switzerland and the Benelux countries. A complementary program included national projects requiring external financial assistance. The total planned capacity under the two programs was 7,800 megawatts, which was in addition to the national projects for 15,000 megawatts. The largest increases in net generating capacity during the next five years were to be: Great Britain (6,600 megawatts); France (2,690 megawatts); Italy (2,971 megawatts); and the bizone of western Germany (3,000 megawatts). The greatest percentage increase was for Greece, where the capacity was to rise from 156 megawatts in 1948 to 619 megawatts in 1953.

The position of power capacity and energy production in western Europe was clearly set out in a report of the electricity committee of the Organization for European Economic Cooperation issued during the year. This showed that an estimated deficit of 8,500,000 kw. in 1949 would be likely to rise, through increasing demand, to a deficit of 20,000,000 kw. by June 1952 and that the new construction planned would still leave a gap of 4,000,000 to 5,000,000 kw. or 16,000,000,000 kw.hr. a year.

The potential water power resources capable of development in the Scandinavian countries was estimated, in terms of annual energy production, as follows: Norway 120,000,000,000 units a year; Sweden 50,000,000,000; Finland 10,000,000,000.

(E. W. G.)

Publishing (Book): *see* Book Publishing.

Puerto Rico. A U.S. insular dependency in the West Indies, Puerto Rico has an area of 3,435 sq.mi. Pop. (July 1, 1949, est.) 2,180,314, (1940 census) 1,869,255. According to 1949 population estimates, rural population was 64% of the total, urban population, 36%. Chief cities (with 1949 urban pop. est.): San Juan, the capital (237,623); Ponce (74,393); Mayagüez (62,051); Arecibo (38,788); Caguas (28,173); Río Piedras (26,523). Languages: Spanish and English. Religion: predominantly Roman Catholic. Governor in 1949: Luis Muñoz

SKILLED LABOUR for Puerto Rico's growing industrialization being trained to operate machine tools in the School of Industrial Arts opened at San Juan, in 1949, as part of the University of Puerto Rico

Marín.

History.—With the election of the governor by the people of Puerto Rico in Nov. 1948 and his taking office in Jan. 1949, Puerto Rico became for all practical purposes a self-governing part of the United States. The elected governor appoints all members of his cabinet, which comprises the attorney general, the treasurer and the commissioners of the departments of agriculture and commerce, health, education, labour and interior. The legislature of Puerto Rico, composed of a senate and a house of representatives, and elected for a term of four years by the people of Puerto Rico, is empowered to legislate in all matters pertaining to the internal affairs of the island.

Education.—There were 446,520 pupils enrolled during 1949 in the public and private schools. Public schools, 421,625 pupils; private schools, 24,895. Enrolment in the public schools was distributed as follows: 300,163 in elementary schools, 86,066 in secondary day schools, 1,292 in vocational schools, 12,625 in evening schools and 21,479 in special groups for veterans. In the public schools, the number of teachers, principals, assistant principals and assistant superintendents was 9,375. Private schools employed 1,070 teachers. Higher education was carried on by three institutions: The University of Puerto Rico, the Polytechnic Institute of Puerto Rico and the College of the Sacred Heart. During the year another university, Santa María university, was opened by the Catholic Church at Ponce.

Banking and Finance.—At the close of the fiscal year 1948–49, 13 banks with 31 branches were operating in Puerto Rico. Bank deposits on June 30, 1949, were $244,399,042; debits were $275,148,472 and bank loans were $119,412,788.

Insular government revenues and receipts for the fiscal year 1948–49 totalled $206,818,177, of which $108,906,216 was received in the general fund, and $97,911,961 in all other funds. The total disbursements for the same period were $230,113,948. Of this total, disbursements from the general fund amounted to $132,462,349 and from all other funds $97,651,599.

Trade.—The total value of imports into Puerto Rico during the calendar year 1948 was $362,373,214. Of this total, $337,929,793 (93.3%) were shipments from the United States to Puerto Rico and $24,443,421 (6.7%) were imported from other countries. The total value of exports for the same period was $194,952,278, of which $188,627,317 (96.8%) were shipments from Puerto Rico to the United States and $6,324,961 (3.2%) were exported to foreign countries.

Communications.—During the fiscal year 1948–49, 55,710 motor vehicles were registered, of which 34,570 were automobiles and buses, excluding government-owned automobiles; 9,098 were heavy trucks; 8,212 were light trucks; 3,830 were other motor vehicles. The insular department of the interior kept under maintenance as of June 30, 1949, 3,437 km. of roads.

During the fiscal year 1948–49, 3,130 vessels arrived at the island, with a registered tonnage of 9,916,700 short tons. During the same period, a total of 124,275 passengers came to the island; 116,620 by air and 7,655 by water. A total of 157,328 passengers went out of the island; 150,040 by air and 7,288 by water.

At the close of the fiscal year 1949 (June 30, 1949) there were 33,312 telephones in service.

Agriculture.—During the 1949 crop year, 10,998,200 short tons of sugar cane were harvested. The tobacco crop for 1949 was estimated at 270,000 cwt. The coffee crop for 1949 was estimated at 229,200 cwt. Pineapple production for the same period was estimated at 1,250,000 crates.

Manufacturing.—Sugar production for the 1949 crop year amounted to 1,278,000 short tons of raw sugar, 96° basis. Sugar-refining operations in the island yielded 210,000 short tons of refined sugar, 96° basis.

The total production during the fiscal year 1948–49 of some other manufactured products was as follows:

Product	Production	Product	Production
Molasses, gal.	54,947,737	Shoes, pairs	273,243
Distilled spirits, proof gal.	1,813,879	Heavy clay, tons	11,613
Cement, bbl.	2,466,703	Sanitary ware, pieces	29,468
Cigars	66,497,000	Glass containers, short tons.	18,403

During the fiscal year 1948–49 the total amount of constructions authorized through building permits amounted to $43,037,302. Electric power generated for the same period amounted to 494,440,325 kw.hr.

Employment.—As of June 30, 1949, the total labour force of Puerto Rico was estimated at 701,000 persons. Of this total, 644,000 were employed, 250,000 in agriculture and 393,000 in all other industries. The estimated unemployment as of this date was 57,000 persons.

(J. L-Ee.)

Pulitzer Prizes.

The annual Pulitzer prizes in journalism, letters and music, first awarded in 1917, were established at Columbia university by the will of Joseph Pulitzer. The 1949 prizes in letters, five in number and of $500 each, were awarded as follows: fiction award to James Gould Cozzens for *Guard of Honor* (Harcourt, Brace); history award to Roy Franklin Nichols for *The Disruption of American Democracy* (Macmillan); biography award to Robert E. Sherwood for *Roosevelt and Hopkins* (Harper); poetry award to Peter Viereck for *Terror and Decorum* (Scribner); drama award to Arthur Miller for *Death of a Salesman* (Viking).

Eight prizes in journalism amounting to $500 each were awarded as follows: for meritorious public service to the *Nebraska State Journal* for its campaign for an "all-out" presidential preference primary in Nebraska; for local reporting to Malcolm Johnson of the *New York Sun* for his series of 24 articles, "Crime on the Waterfront"; for national reporting to C. P. Trussell, Washington correspondent of the *New York Times*, for his "consistent excellence in covering the national scene from Washington"; for international reporting to Price Day of the *Baltimore Sun* for his series of 12 articles entitled "Experiment in Freedom—India and Its First Year of Independence"; for distinguished editorial writing to John H. Crider of the *Boston Herald* and Herbert Elliston of the *Washington Post;* to Lute Pease of the *Newark Evening News* for his cartoon "Who, Me?"; to Nathaniel Fein of the *New York Herald Tribune* for his outstanding news photograph "Babe Ruth Bows Out."

The Pulitzer prize in music, first given in 1943, was awarded to Virgil Thomson for his music for the motion picture *Louisiana Story.*

(R. E. Bs.)

Pulp Industry: *see* PAPER AND PULP INDUSTRY.

Pulsejets: *see* JET PROPULSION.

Pyrite: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Q Fever: *see* EPIDEMICS; PNEUMONIA; VETERINARY MEDICINE.

Quakers: *see* FRIENDS, RELIGIOUS SOCIETY OF.

Quebec.

The largest Canadian province, with an area of 594,534 sq.mi., Quebec is located centrally along the lower St. Lawrence river, and extends north to Hudson bay strait. Pop. (1941) 3,331,882; (1949 est.) 3,887,000. The chief city is Montreal (*q.v.*) (pop. 1941) 903,007, and capital is Quebec city (pop. 1941) 150,757.

History.—During 1949 the Quebec provincial government called for a clearer delineation of federal, provincial and municipal tax fields, and set up a commission to look into federal "intrusion" into the provincial insurance field.

The legislature studied 130 bills during the 1949 session, the most significant being: increased aid to agriculture; extension of highways; reclamation of marshlands through drainage, and authorization of $3,500,000 as a contribution to interest charges on private housing loans. Despite a popular poll which recorded that 55% of the province's voters were in favour of the sale of margarine, the government banned the manufacture and sale but not possession of the butter substitute. A new court of review in provincial matters was created to provide for the right of appeal against judgments in penal prosecutions.

A bill to enact a labour code was introduced into the legislature on Jan. 19, 1949, and shelved indefinitely on Feb. 9, in the face of strong labour union disapproval. The proposed code not only consolidated existing legislation but proposed banning Communists from union posts, compulsory audit of union books and restrictions on union security and striking. Labour legislation which passed provided for arbitration of disputes between municipal and school corporations and their employees. By amendments to the Social Welfare and Youth act, the government was empowered to organize handicraft, arts and crafts, and trade schools, in an effort to increase technical ability and raise labour standards.

Education.—Government spending on education was raised from $14,331,000 for 1948–49 to $18,538,400 for 1949–50, with a considerable part of the latter being capital expenditures. The latest revised statistics available in 1949 were for 1946 provincially controlled schools: total enrolment, 557,972; average daily attendance, 472,602; total revenue

(1945) $32,338,257.

Health and Welfare.—The public health was strengthened in 1949 to protect workers exposed to harmful dusts, gases and fumes. The department of health reported that the general mortality rate had been reduced to 9.1 per 1,000, but the infant mortality rate stood at 57 per 1,000 (compared with 132 per 1,000 in 1935). The number of hospital beds increased to 54,600 by Jan. 1949 (1936: 36,000). During 1948, 125,000 persons were given free tuberculosis examination, and the number of provincial mobile inspection units was increased to five during 1949. The province received its share of the annual federal $30,000,000 health grant.

Communications.—The 2,344,125 tourists visiting Quebec in 1949 spent $125,000,000 in the retail trade, which was running at the monthly rate of $154,000,000 in Sept. 1949 (Sept. 1948: $141,000,000). However, the provincial government road program was reduced from $63,605,000 in 1948–49 and to $36,775,000 in 1949–50. Railway projects included the Romain River Railway to tap the newly discovered titanium deposits and the Quebec North Shore and Labrador Railway to tap the iron ore deposits.

Finance.—The report of public accounts for the fiscal year ending March 31, 1948, tabled in the legislature in Jan. 1949, showed revenues at a record level of $167,792,991, expenditures of $164,352,233, net public debt of $274,912,456. Presenting the 1949–50 budget in Feb. 1949, the government estimated $176,650,000 in revenues and $176,497,860 in expenditures (all-time high). The biggest payments were slated for agriculture ($12,226,000), social welfare and youth ($17,603,000), colonization ($7,591,900), health ($26,068,250) and roads ($36,775,000).

Natural Resources.—The biggest development during 1949 was the discovery of vast additional iron ore fields in northeastern Quebec adjacent to the Quebec-Labrador fields discovered in 1947. It was estimated that it would cost $1,400,000,000 to develop the region, and immediate expenditures of $200,000,000 were announced, to produce 10,000,000 tons annually by 1953. Rich gold veins were uncovered at Chibougamau, and a $4,000,000 road was pushed to open the area. Uranium was discovered at Portneuf and samples were under commercial investigation at the year end. By 1949 the provincial government, as part of its program to aid commercial fisheries, operated 40 cold storage plants, 3 artificial dryers, and 41 grading sheds.

FILMS OF 1949.—*Saguenay* (National Film Board of Canada).

(C. Cy.)

Quirino, Elpidio (1890–   ), president of the Republic of the Philippines, was born on Nov. 16 in Vigan, Luzon, and graduated from the University of the Philippines law school in 1915. He became secretary to Manuel Quezon, who was later first president of the Philippine commonwealth. Quirino served in the Philippine house of representatives and also in the senate, and in 1936 was named secretary of the interior. During the Japanese occupation he practised law and secretly helped the guerrilla movement. He became vice-president of the new Republic of the Philippines in 1946, and president on the death of Manuel Roxas, April 15, 1948. In July 1949, Quirino conferred with Chiang Kai-shek, retired president of nationalist China, who proposed an anti-Communist union of Pacific nations. In August, Quirino addressed the United States congress on the subject of the union. He received sympathetic interest from the U.S. state department but no assurance of active U.S. backing. In Nov. 1949, he was re-elected president in balloting that was marked by considerable violence.

Racing and Races: *see* AIR RACES AND RECORDS; AUTOMOBILE RACING; HORSE RACING; MOTOR-BOAT RACING; TRACK AND FIELD SPORTS; YACHTING.

Radar: *see* ELECTRONICS; MUNITIONS OF WAR.

Radio. Throughout the world, an estimated 6,500 radio broadcasting stations were in operation or under construction in 1949, compared with about 6,000 the preceding year. These included boosters or relay stations, but not television and frequency modulation (FM) stations.

The number of radio receiving sets in use throughout the world was estimated to have increased by 10,000,000 to 15,000,000 during the year, probably reaching 156,000,000 to 161,000,000. North America remained the leading continent in this regard, with the U.S. alone accounting for 81,000,000 (an increase of 7,000,000 over 1948), according to figures compiled by O. H. Caldwell, editor of *Tele-Tech* magazine.

U.S. Stations and Scientific Developments.—Compared with some of the earlier years, 1949 was not a time of great construction in the field of radio broadcasting. The amplitude modulation (AM) or standard broadcast band had been virtually filled in the boom years following World War II, particularly 1946 and 1947, when new stations came into being at the rate of about 500 a year. Thus, by 1949 little room was left for additional stations in this section (550–1,600 kc.) of the radio spectrum. In FM the year saw more authorizations deleted than added.

Broadcasting Magazine's box score of station authorizations showed, as of Dec. 30, 1949, a total of 3,138 broadcasting stations operating or authorized in the U.S. This was less than the figure 12 months earlier (3,219), but the number of stations actually on the air was the greatest in history—2,926, compared with 2,655 in Dec. 1948.

Most of the outstanding authorizations covered AM stations; the AM total was 2,237, a gain of 109 during the year. The number of FM permits dropped by 178, from 968 in January to 790 in December. Even so, FM closed the year with more stations actually in operation than when it started—743 as against 697 in January.

The number of new-station applicants, meanwhile, was declining. Applications for new AM outlets stood at 329 in mid-December, as against 524 a year before. Of the 329, Federal Communications commission records showed 266 were "hearing" cases, which meant in most instances that two or more applicants were seeking a frequency which for engineering reasons could be assigned to only one.

Indicative of an increasingly competitive economy, the number of station deletions—authorizations cancelled, voluntarily or otherwise—reached a record peak in 1949. The total as computed by *Broadcasting Magazine* from day-by-day reports was 282—60 AM, 209 FM, and 13 TV. These included 51 operating stations (31 FM, 20 AM). Although the economic factor did

RECORD PLAYERS matching the three types of records available in 1949: upper left, for standard records played at 78 r.p.m.; lower left, wide-spindled player for midget-sized records played at 45 r.p.m.; right, for long-playing records played at 33⅓ r.p.m. Few types of players sold during the year could be used for all three kinds of records without special attachments ot figure in all deletions, it was present in most. So also did t figure in many of the 164 major sales of full or partial inter-ests in radio stations (mostly AM) during the year. The total ale prices in the 164 transactions were reported as $13,730,500.

Facsimile.—Approximately a dozen FM stations, most of hem operated by newspapers, were engaged in facsimile transmissions during 1949. Most of the transmissions were in news-aper style. Under the technical standards, paper size was 8.2 n., with speeds permitting transmission of 16 letter-size pages er hour. In late 1949 the FCC held hearings on a petition ask-ng for removal of restrictions on the number of hours in which ultiplex facsimile was permitted. Multiplexing is the transmis-ion of both FM sound programs and facsimile simultaneously, s distinguished from simplex operations, which require inter-uption of the FM sound program during facsimile trans-issions.

U.S. Commercial Broadcasting.—*AM Revenues and Ex-enses.*—Total broadcast revenues from AM operations reached n all-time peak in the United States during 1948, the latest year or which official FCC reports were available. Despite an 11.9% ain in revenues, however, net income fell 10.73% below the 947 level, because of a 17.5% rise in operating costs.

The FCC report, issued in Dec. 1949, showed AM broadcast evenues of $406,995,414; broadcast expenses of $342,903,730; nd broadcast income of $64,091,684 before federal income axes. The figures were based on reports from 7 AM networks, heir 27 owned and operated stations and 1,797 other AM sta-ions, compared with 7 networks and 1,464 stations in 1947.

The four nation-wide and three regional networks and their 7 owned stations accounted for $109,031,802 (26.79%) of 1948 otal AM broadcast revenues and $18,085,191 (28.22%) of net roadcast income. The 1,797 other AM stations which filed re-orts accounted for $297,963,612 (73.21%) of broadcast reve-ues and $46,006,493 (71.78%) of net income. In 1947 the etworks and their 27 stations reported $104,407,721 (28.71%) f all broadcast revenues and $19,573,573 (27.26%) of broad-ast income; the 1,437 other reporting stations accounted for 259,306,666 (71.29%) of revenues and $52,222,367 (72.74%) f broadcast income.

Receipts from the Sale of Time.—Time sales, the financial ackbone of broadcasting, totalled $416,720,279 during 1948, hus setting a new record 11.4% above the previous peak figure f $374,086,686, recorded in 1947. Revenues from time sales to ocal advertisers aggregated $170,908,165, a gain of 15.65% over he preceding year's total; sales of nonnetwork time to national nd regional (spot) advertisers totalled $104,759,761 for a 4.39% gain, and sales of network time amounted to $141,052,-53, an increase of 4.7%.

These totals included commissions paid to agencies, represen-atives, etc., which broadcasters continued to count as an ex-ense of sale. Commissions totalled $50,292,281 in 1948, $47,-69,521 in 1947. (*See* also ADVERTISING.)

AM Industry Balance Sheet.—Table I, prepared by the FCC, shows comparative calendar year 1947–48 financial data for the AM broadcasting industry as a whole.

Table I.—*Financial Status of AM Broadcasting Industry in U.S.*

AM networks and stations	1948†	1947*	Per cent increase (decrease in parentheses)
vestment in tangible broadcast property:			
Cost to respondent	$201,408,564	$150,373,623	33.94
Depreciation to date under present owner	66,745,050	57,065,893	16.96
Depreciated cost	134,663,514	93,307,730	44.32
evenues, sale of network time	141,052,353	134,726,631	4.70
evenues, nonnetwork time	275,667,926	239,360,055	15.17
ommissions to agencies, etc.	50,292,281	47,969,521	4.84
evenues from talent sales, etc.	40,567,416	37,597,222	7.90
otal broadcast revenues	406,995,414	363,714,387	11.90
otal broadcast expenses	342,903,730	291,918,447	17.47
roadcast income (before federal income taxes)	64,091,684	71,795,940	(10.73)

*Seven networks, 1,464 stations covered in report.
†Seven networks, 1,824 stations covered in report.

BRIDE AND MASTER OF CEREMONIES on a "Bride and Groom" program in which couples were married at a radio studio chapel and then given household appliances such as washing machines. "Giveaway" programs were classed as lotteries by the FCC in Aug. 1949, and ruled illegal, though a stay on the ban was granted pending federal court ruling

Average Station's Finances.—The average AM station's income before federal income taxes in 1948 was $38,465, or approximately 5.9% less than it was in 1947. The figures, released by FCC, were based on reports from 1,313 stations which had been in operation for at least two years. The average pretaxes income for the year ranged from $341,257 (average of 46 clear-channel 50-kw. stations) to $4,464 (average for 66 local part-time stations).

Broadcast Expenses.—Programming remained the most expensive item on broadcasting's operating cost sheet in 1948. Of the $342,903,730 in expenses reported by 7 networks and 1,824 AM stations, $133,169,614 was classified as program expense. Next largest item was general and administrative expense, $107,937,676. Technical costs were $52,155,834; selling expenses, $47,402,165. By comparison with 1948's $342,000,000 expenses, 1947's totalled $291,918,447.

Losses.—FCC reported that a total of 581 AM stations—32% of all AM stations in operation—reported losses from broadcast operations in 1948. Most of these (442) were from the approximately 900 stations which began operation after World War II. Of about 320 stations which began broadcasting in 1948, 235 lost money during the year. FCC's records also showed that 259 of the year's unprofitable stations served as affiliates of national networks, and that 322 did not. Total losses of the 581 stations amounted to $9,350,955.

FM Finances.—FCC reported that 593 (85%) of the 700 commercial FM stations on the air at the end of 1948 were operated by licensees who also operated AM stations. Of these, 77 reported separate FM revenues, with income and expense data as follows:

	Aggregate	Average per station
Total broadcast revenues	$ 621,469	$ 8,070
Total broadcast expenses	2,153,659	27,970
Total broadcast loss	1,532,190	19,900

Of the 107 (15%) FM stations which had no AM affiliate, 89 filed financial data with the FCC, which summarized the information as shown below:

	Aggregate	Average per station
Total broadcast revenues	$1,126,208	$12,650
Total broadcast expenses	4,182,558	46,990
Total broadcast loss	3,056,350	34,340

FCC said only 7 of the 166 reporting EM stations reported profits for the year.

Estimated 1949 Time Sales.—*Broadcasting Magazine* placed the 1949 figure of time sales at approximately $429,000,000, a 3% gain over the 1948 official total. *Broadcasting Magazine* also estimated that revenues from the sale of talent, etc., would amount to about $22,000,000, bringing radio's gross revenues to $451,000,000. Incorporating these estimates, *Broadcasting Magazine*'s 1950 *Yearbook* offered 1948–49 comparisons of net time sales as shown in Table II.

Table II.—*Time Sales of U.S. Stations*

Class of business	1949 (estimated)	Per cent of total	1948	Per cent of total
National network.	$127,590,000	29.8	$133,723,098	32.1
Regional and miscellaneous networks	7,500,000	1.8	7,329,255	1.7
National and regional non-network time	112,000,000	26.2	104,759,761	25.1
Local	181,900,000	42.2	170,908,165	41.1
Total.	$428,990,000	100.0	$416,720,279	100.0

U.S. Programs.—The most popular AM network programs, segregated between daytime and evening, during the week of Nov. 1–7, 1949, were as shown in Tables III and IV, according to C. E. Hooper, Inc., creator of the Hooperatings-Radio Audience Measurement. The corresponding rankings of the same programs in 1947 and 1948 are also shown.

The giveaway program "fever" which seized the U.S. in 1948 continued to rage during the first part of 1949, then began to subside. In August, FCC made final its proposal to ban such programs on lottery grounds, adopting rules to become effective Oct. 1. At the time, the four major networks were carrying 38 giveaway programs which, according to estimates by *Broadcasting Magazine,* occupied $650,000 worth of air time each week and offered $185,000 worth of money and merchandise in prizes every seven days. Before the effective date, FCC suspended its rules, pending court tests of their legality.

Table III.—*Top Evening Hooperatings*

Program	Nov. 1-7, 1949, Hooperating	Nov. 1–7, 1948, position	Nov. 1–7, 1947, position
Radio Theatre	25.0	2	4
Godfrey's Talent Scouts	22.2	6	18
Jack Benny	20.6*	4	3
My Friend Irma	20.1	7	12
Fibber McGee & Molly	18.6	3	1
Walter Winchell	17.3*	1	11
Crime Photographer	15.9	13	42
Bing Crosby.	15.6	18	17
Suspense	15.3	24	46
Charlie McCarthy	15.3*	19	5
FBI in Peace and War	15.2	23	80
Dennis Day	15.0	22	24
Bob Hope	14.9	5	2
People Are Funny	14.7	12	33
Mr. & Mrs. North.	14.7	52	38
Amos 'n' Andy	14.7	38	6
Mr. Keen	14.7	14	55

*Includes second broadcast.

Table IV.—*Top Daytime Hooperatings*

Program	Nov. 1-7, 1949, Hooperating	Nov. 1–7, 1948, position	Nov. 1–7, 1947, position
Ma Perkins (CBS).	7.2	1	6
Big Sister	7.1	9	12
Young Widder Brown	6.8	3	3
Arthur Godfrey (10:15–11:30) . . .	6.5	5*	21*
Pepper Young's Family	6.5	10	8
Our Gal Sunday	6.5	12	1
Aunt Jenny	6.2	17	2
Romance of Helen Trent	6.1	11	4
Right to Happiness	6.1	8	9
Wendy Warren	6.0	20	36

*Arthur Godfrey's ratings in 1948 and 1947 were not for exactly the same time periods.

Table V.—*Distribution of Nationally Sponsored Network Time (Evening)*

Type of program	Per cent of time on the ai 1949	1948
Mystery	16.0	13.2
News and commentators	15.7	15.4
Variety.	12.6	16.9
Situation comedy.	12.6	9.1
Popular music	11.8	11.9
Audience participation	11.8	9.4
Plays	9.9	12.5
Concert music	2.3	3.1
Radio columnists	1.9	3.5
Miscellaneous	5.4	5.0

By late 1949 the public already was beginning to tune out the giveaway, without waiting for a court order. "Stop the Music," one of the most popular giveaway shows, reached a peak 20.7 Hooperating in March but by November had dropped to 10.1, which ranked it 51st among all evening network commercial programs.

Mysteries meanwhile replaced variety shows as the dominant nighttime commercial program type. (See *Network Programs by Types,* below.)

Special Events.—The inauguration on Jan. 20, 1949, of Pres. Harry S. Truman and of Alben W. Barkley as vice-president was taken via radio and television to more viewers and listeners than ever before. In addition to domestic coverage, the state department's "Voice of America," the British Broadcasting Corp. and the French Broadcasting system beamed shortwave accounts overseas.

Vice-President Barkley figured in another widely followed broadcast-telecast ten months later, when he was married on Nov. 18 to Mrs. Carleton S. Hadley in St. Louis, Mo.

In the meantime, radio again went all over the world to give first-hand coverage of news events wherever they occurred, from wars and politics to sports and social affairs.

Network Programs by Types.—Table V shows the general composition of commercial evening programs broadcast on the four national networks during the week of Nov. 1–7, 1949, compared with the same week of 1948. The table was prepared from information supplied by C. E. Hooper, Inc.

Table VI shows the daytime division of network commercial time according to program types, also based on information from C. E. Hooper, Inc.

U.S. Manufacturing.—U.S. radio set production declined sharply in 1949. The Radio Manufacturers association, representing more than 80% of the industry, estimated the year's production by R.M.A. members and nonmembers as approximately 10,000,000 receivers (including about 1,000,000 FM). By comparison, 16,500,000 radio receivers were produced in 1948.

Receiver tube production also declined. The Radio Manufacturers association estimated production at 190,000,000 radio receiver tubes in 1949, compared with 204,720,378 in 1948.

U.S. Organizations, Employment, Regulation.—The year

Table VI.—*Distribution of Nationally Sponsored Network Time (Daytime)*

Type of program	Per cent of time on the air 1949	1948
Serial drama	57.1	51.7
Audience participation	25.1	25.7
News and commentators	2.6	5.2
Popular music	1.5	3.7
Miscellaneous	13.7	13.7

REHEARSALS for four 1949 broadcasts of the radio drama series "Suspense," showing how much the players feel it necessary to act out their roles for more convincing performances, though they are unseen by their audiences

1949 saw the broadcasting industry take a major step to improve its competitive position in the growing battle for the advertising dollar. At its annual convention in Chicago, Ill., in April, the National Association of Broadcasters (N.A.B.), dominant trade organization, set up a full-time Broadcast Advertising bureau (B.A.B.) to "sell" radio aggressively on a level with competing media. B.A.B. commenced operations in midyear, under the direction of Maurice B. Mitchell, who had been in charge of the N.A.B. department of broadcast advertising.

Coincident with the establishment of B.A.B., the N.A.B. board of directors approved a $75,000 loan to Broadcast Measurement bureau, audience measurement organization sponsored by N.A.B., the American Association of Advertising Agencies and the Association of National Advertisers. The loan was to cover completion of B.M.B.'s second national audience survey, in progress in 1949.

In December, the three-year-old FM association, a promotional agency comprising some 200 FM stations, voted to accept an N.A.B. offer of merger, effective Jan. 1, 1950.

Broadcast Music Inc. (B.M.I.), an independent unit operating alongside the N.A.B., continued to function as radio's own music-licensing group.

The National Association of Radio Station Representatives (N.A.R.S.R.) also continued in operation on an expanding scope. N.A.R.S.R.'s charge that the major networks were violating FCC's network rules by representing some affiliates for the sale of spot advertising—a function of N.A.R.S.R. members themselves—at year's end was still undecided by FCC, which had completed hearings in January.

Employment.—A 17% increase in broadcast employment was reported by FCC in 1949, based on data filed by 1,613 AM stations and four national and three regional networks for a sample week of Oct. 1948. Full-time employment was 39,572. By comparison, the networks and 1,260 AM stations reported 34,720 full-time employees in a sample week of Oct. 1947.

Aggregate weekly pay rolls of networks and stations rose from $2,508,000 in 1947 to $3,003,111 a year later, a gain of approximately 20%, according to FCC's figures. The average weekly pay was $71.22 in the 1948 sample week, compared with $72.40 the previous year. Average work week was 40.27 hr. in the 1948 report and 39.4 hr. in 1947, exclusive of executives' hours, which were not reported.

Regulation.—The FCC in 1949 handed down several policy-making decisions, one of which reversed the long-standing *Mayflower* decision forbidding radio station owners to editorialize on the air. Henceforth, FCC said in a new decision, issued June 2, broadcasters may air their own views on controversial and other issues, provided they treat with "fairness" those who wish to present opposing viewpoints.

Another policy decision was FCC's repeal of the so-called

"Avco rule," which had required that contracts for the purchase of radio stations be advertised, so that anyone who wished to do so might offer to buy on the "same terms and conditions."

Still pending at the end of 1949 were other far-reaching questions, including (1) the "clear channel" case, involving the exclusivity of clear channels of AM radio and a proposal that clear-channel stations be allowed to operate with power up to 750 kw. instead of the existing 50 kw. maximum and (2) the qualifications of antitrust law violators to own radio stations.

Inter-American Agreements.—The North American Regional Broadcasting Agreement (N.A.R.B.A.), which had governed allocations among North American nations since 1941, expired on March 29, 1949. Conferences to negotiate a new agreement were opened at Montreal, Que., Canada, in September under a schedule set up prior to N.A.R.B.A.'s expiration; in December they were recessed, stalemated by U.S. refusal to accept Cuban demands for rights on scores of channels heretofore within U.S. priorities. The U.S. and Cuban delegations were scheduled to confer in Havana, Cuba, starting Feb. 1, 1950, in an effort to smooth out their differences, and the full N.A.R.B.A. conference was then slated to resume in the U.S. about April 1, 1950. Nations involved were the Bahamas, Canada, Cuba, Dominican Republic, Haiti, Mexico and the U.S.

(R. W. Cr.; S. Tf.)

International Developments.—Once again the international implications of the medium occupied the attention of radio organizations throughout 1949. The working out of the medium wave allocations agreed upon at the Copenhagen conference in 1948 proved to be both onerous to those countries who readily accepted its decisions and controversial where its provisions led to results not fully seen by the negotiators on the spot. As late as December, meetings were being held in Washington, D.C., at which the fulfilment of the plan hung in the balance, and there was no guarantee that the deadline of March 1950 would, in fact, be observed. The even more complex subject of short waves was argued for months at Mexico City, Mexico. Finally, in April 1949, 51 delegations accepted a plan, the first world plan of short-wave distribution ever to be agreed, which was based on what is known as "summer intermediate sun activity." The adaptation of the plan, which was passed to a technical committee, although bound to decrease the number of frequency hour availabilities by introducing proportionate reductions from country to country, would not involve the disappearance of programs already in being. Unfortunately, included in the 18 delegations who remained negative were both the U.S. and the U.S.S.R. Meanwhile in Europe steps were taken toward the formation of a European broadcasting organization which should be fully representative of the democratic powers. In 1949 two organizations existed, the Union Internationale de Radiodiffusion (U.I.R.), based in Switzerland and during World War II largely dominated by Germany, and the Organisation Internationale de Radiodiffusion (O.I.R.), based in Belgium and largely dominated by east European countries. From both of these organizations the B.B.C., largest and most powerful of the European radio bodies, stood aside. At Stresa, Italy, in the summer some progress was made toward ending the deadlock, the B.B.C. being represented in unofficial discussion with members of the U.I.R. On the international cultural side, there was good progress to record with the award of the first Italia prize, a competition for an original work for radio to which 12 countries contributed, including Czechoslovakia, Finland and Monaco. An international jury made the first award to France, for a musical farce entitled "Frederick the General," the second to Great Britain for a radio reconstruction of "The Old and True Story of Rumpelstiltskin" and the third to Monaco for "Lost Song," a radio film. The Italia prize was created a foundation and would be given, in alternate years, for musical and literary works. Further evidence of international co-operation came from the northern European states. In June, Danish, Finnish, Icelandic, Norwegian and Swedish representatives met in Stockholm, Sweden, and decided to embark on an ambitious series of relays, involving concerts, Nordic art, drama and literary chronicles. Continuous exchange of technical data was also agreed upon.

Great Britain.—As a result of intensive soviet jamming of B.B.C. broadcasts, the B.B.C. in collaboration with stations in the U.S. zone of Germany retaliated by bringing an unparalleled transmitter strength to bear on the U.S.S.R. More constructively, perhaps, the B.B.C. increased its listeners to "English by Radio" courses not only in western Europe but also in some east European states. More than 1,000 Bulgarian listeners, for instance, wrote to London for texts of a progressive course of lessons. From eastern Germany, too, came a heavy mail as the result of a new program intended to keep the population in touch with the outside world. Outside Europe, a new B.B.C. service was inaugurated in the autumn to Israel, in Hebrew, the first of its kind in the world. Within the British Commonwealth of Nations, separate transmissions were begun for India and Pakistan in place of the previous combined Hindustani service. Arrangements between the governments of the United Kingdom and Ceylon allowed for the use during eight-and-a-half hours every day of Radio Ceylon (formerly Radio S.E.A.C.) for transmitting B.B.C. programs to the far east.

Europe.—German developments were the most spectacular. In the U.S. and British zones it was decided that the only satisfactory coverage, after the Copenhagen plan came into operation, would be by frequency-modulation transmission on ultra-short waves. The industry was accordingly requested to produce receivers. If the plan went through, which seemed probable, Germany would be the first European country to introduce ultra-short wave broadcasting on a large scale. In the meantime, the Bavarian radio, with U.S. permission, became commercial; and in Berlin the U.S.-controlled R.I.A.S. instituted a system unique in Europe, whereby telephone subscribers by dialling a certain number were connected to a nonstop news service, recorded on magnetic tape, and changed three times daily. On the other side of the "iron curtain," more and more attention was paid to education, which, whether for the young or for adults, was made the vehicle of much party propaganda. In Poland, however, and to a certain extent in Czechoslovakia, this increasing use of the radio for political propaganda did not prevent the emergence of programs of good music. The French radio gave some time to the project of a radio university.

British Commonwealth.—As in Great Britain, broadcasting in Australia and Canada came under enquiry during 1949. A new control board in Australia, while approving the basic system, in which public service and commercial broadcasting services existed side by side, declared that many improvements were necessary to supply listeners with an adequate broadcasting service. In Canada a Royal Commission on Arts, Letters and Sciences was still sitting at the end of the year. To it both private broadcasters and the Canadian Broadcasting commission had submitted evidence, the former asking for equal rights with the C.B.C., the latter declaring that judgment in broadcasting matters should be based solely on public interest and calling for a fully national radio system, owned and supported by the public. South Africa's earlier declared intention to pursue commercial broadcasting as a new policy was now understood to involve no separate organization. The S.A.B.C. would remain in charge of three programs, of which the third would be commercial. India announced an eight-year plan for extending radio throughout India, serving ten times the former area and reaching 80,000 villages instead of the then 5,000. The government was to provide receiving sets and loudspeakers. In the colonies, interest in broadcasting was growing apace. It was understood that certain funds might shortly be made available for erecting new stations, especially in British West Africa and the West Indies. The B.B.C. was called into consultation by the Colonial Office and undertook service surveys for the government at home. (*See* also ADVERTISING; FEDERAL COMMUNICATIONS COMMISSION; TELEVISION.)

Radioactive Compounds: *see* CHEMISTRY.
Radiology: *see* X-RAY AND RADIOLOGY.
Railroad Accidents: *see* DISASTERS.
Railroad Retirement Act: *see* SOCIAL SECURITY.

Railroads.

United States.—From the viewpoints of railroad management, the stockholders and the bond holders, the record of 1949 was distinctly discouraging. In comparison with 1948 there were substantial decreases in volume of traffic, operating revenues, net income and return on capital investment. The greatest decline was in the last quarter of the year. The number of loaded cars moved in October was the lowest in any October in the last 30 yr. The outlook for 1950 was not promising.

The following table shows the significant items in the income account of class I railroads (constituting about 95% of the total U.S. railroad mileage) for the 12 months ended Sept. 30, 1949, compared with the calendar years 1948, 1944 and 1929. The two years last named were chosen for comparative purposes because 1944 was the year in which war traffic was at its height and 1929 was a prosperous predepression year. The constructive year ended Sept. 30, 1949, however, does not reflect the adverse conditions of the last quarter of the year when, because of strikes in the coal and steel industries, there were further heavy losses in traffic and earnings. Nor does it reflect, except for one month, the higher cost of the 40-hr. week which became effective on Sept. 1. The net income of the calendar year 1949, therefore, was less than that of the constructive year ended Sept. 30.

The decline in railroad traffic was due mainly to three factors: (1) the unsettled business conditions which slowed up production and influenced manufacturers and merchants to reduce inventories and to use caution in future commitments; (2) further intensification in competition from carriers by highway, water, pipe line and air; and (3) strikes of coal miners, steel workers and others, which not only reduced rail tonnage in coal, coke, ore, steel and other raw materials, but also cut down the output of manufacturers dependent on those basic commodities.

The net income of railroads was reduced by two unfavourable factors: (1) the decline in operating revenues; and (2) the inability, because of higher wage rates and advances in the prices of materials, to reduce operating expenses in proportion to the loss in operating revenues. Increases in freight and passenger rates were of material assistance, but they lagged behind the cost increases and were not sufficient entirely to overcome the effects of high costs. The return of about 3% on capital (less depreciation) was but one-half of the 6% minimum which railroad spokesmen assert is necessary to maintain credit and to enable the railroads to finance improvements vital to the continuation of adequate service.

Condensed Income Account: U. S. Class I Railroads

Item	12 months ended Sept. 30, 1949	Calendar years 1948	1944	1929
	(Millions)			
Freight revenue	$7,422	$7,967	$6,999	$4,826
Passenger revenue	901	964	1,790	874
Total operating revenues	9,018	9,672	9,347	6,280
Total operating expenses	7,657	7,472	6,282	4,506
Taxes	910	1,029	1,846	397
Net railway operating income	752	1,002	1,106	1,252
Net income after charges	474*	747	667	897
Return on investment less depreciation	3.19%	4.24%	4.71%	5.24%
	(Billions)			
Revenue ton-miles	$568†	$638	$737	$447
Revenue passenger-miles	37†	41	96	31

*Estimated. †Twelve months ended Aug. 31.

GAS TURBINE-ELECTRIC locomotive built by the American Locomotive and the General Electric companies, completing road test runs in June 1949. The first such unit built in the U.S., it produced 4,500 h.p. and could haul 85 loaded freight cars as rapidly as 65 m.p.h.

The intensification of the competition with which the railroads were confronted was evidenced in the growing proportion of total intercity tonnage carried by highway, pipe line and inland waterway carriers. According to figures of the Interstate Commerce commission's bureau of transport economics and statistics, the railroad proportion of total intercity ton-miles fell from 66.9% in 1947 to 64.2% in 1948; the truck share grew from 7.8% to 8.7%; the inland waterways, including the Great Lakes, carried 14.8% in 1947 and 15.3% in 1948; and the pipe line proportion rose from 10.5% to 11.8%. In passenger service the railroad proportion of total intercity passenger-miles by all carriers except private automobiles in 1947 was 59.5%. In 1948 it was reduced to 57.2%. The bus proportion increased from 30.5% to 32.3%. The inland water carriers rose from 2.3% to 2.4%; and the air lines increased their share from 7.7% to 8.1%. (The air proportion of first-class long distance passengers was very much greater.) The bureau estimated that the passenger-miles by private automobile in 1947 were 3.47 times as great as the combined total of railroads, buses, aeroplanes and water carriers. The comparative ratio in 1948 was 3.92 times. The above figures are for 1948, compared with 1947, but there was strong evidence that the 1948 trend away from the rails was continued in 1949.

The gross capital expenditures of class I railroads in roadway, structures, terminal, communication equipment, locomotives and cars in 1949 were estimated at $1,297,000,000. Of that amount, $325,000,000 was devoted to fixed property, and $972,000,000 went into diesel locomotives (to replace less efficient steam power), freight cars and passenger cars of modern design. Out of 1,577 new locomotives installed during the first ten months of the year, the diesels numbered 1,524. Of the locomotives on order on Nov. 1, the diesels were 812 out of 833. During the 12 months ended Oct. 31, 1949, the number of additional streamlined passenger trains was 29, bringing the total number of those modern trains to 147, with a complement of 3,054 cars for 292 sets of equipment. Out of a total of 127 class I railroads, 43 had one or more of such trains.

Practically all of the capital improvements in roadway and structures were financed from earnings—net income "ploughed in" instead of being declared in dividends. Because of low railroad earning power it was practically impossible to raise capital through the sale of stock. The new locomotives and cars were financed by the sale of equipment trust certificates.

The situation with respect to the adequacy of current maintenance of railroad fixed property was not favourable. In a report of the engineering section of the Interstate Commerce commission's bureau of valuation, released in Nov. 1949, the amount of deferred track maintenance: *i.e.*, work which should have been done but was not done because of financial or other reasons, amounted on class I railroads to $875,000,000, an increase of $315,000,000 over the deferred maintenance on Dec. 31, 1948. That something of the same nature was true of equipment maintenance was indicated by figures of the Association of American Railroads which showed that on Oct. 1, 1949, the freight cars in "bad order" were 7.3% of the total. The comparable figure of a year earlier was 4.8%. For locomotives the "bad order" figures were 8.4% in 1949; 7.2% in 1948. These amounts of deferred maintenance indicate that the net income of 1949 was overstated in whatever degree the operating expenses of the year were held down by putting off a part of the normal outlays for current maintenance.

On June 30, 1949, the mileage of railroads of all classes in the hands of receivers or trustees was 13,736, or 5.6% of the total. On the same date in 1948 the bankrupt mileage was 15,100. The Missouri Pacific, which had been in trusteeship since 1933, accounted for about one-half of the total bankrupt mileage. The only notable addition to the list of bankrupt railroads was the Long Island. The Central Railroad Company of New Jersey emerged from trusteeship in June.

In the field of relations between the railroads and the government the following may be noted as happenings in 1949:

1. The implementation of the Bulwinkle bill, enacted in 1948 to legalize the conference method of rate-making by railroads and highway carriers, under the control of the Interstate Commerce commission, had its first step in the commission's approval of the application of western roads for approval of their rate-making associations and other joint agreements. Applications from railroads in other sections and from trucking associations were pending at the close of the year. In the case of the western roads the commission apparently was not impressed by the view of the department of justice, which had opposed the enactment of the Bulwinkle bill, that the conference method of rate-making unduly restrained competition between carriers.

2. Beginning on Nov. 5 the Interstate Commerce commission held hearings on the government claims for reparation (refunds) for alleged overcharges by railroads on the large volume of government freight moved by rail during the war years. The reparations, if granted in full, would require the railroads affected to turn back to the government a sum estimated to be in excess of $2,000,000,000. Inasmuch as the net current assets of all class I railroads on Aug. 31, 1949, were $1,300,000,000 and inasmuch further as their total net income was $747,000,000 in 1948 and $474,000,000 in 1949 (year ended Sept. 30), the seriousness of the government claims is apparent. If reparations were to be granted on the scale urged by the government, railroad bankruptcy on a large scale would be almost certain. The hearings were adjourned on Dec. 5 to March 20, 1950.

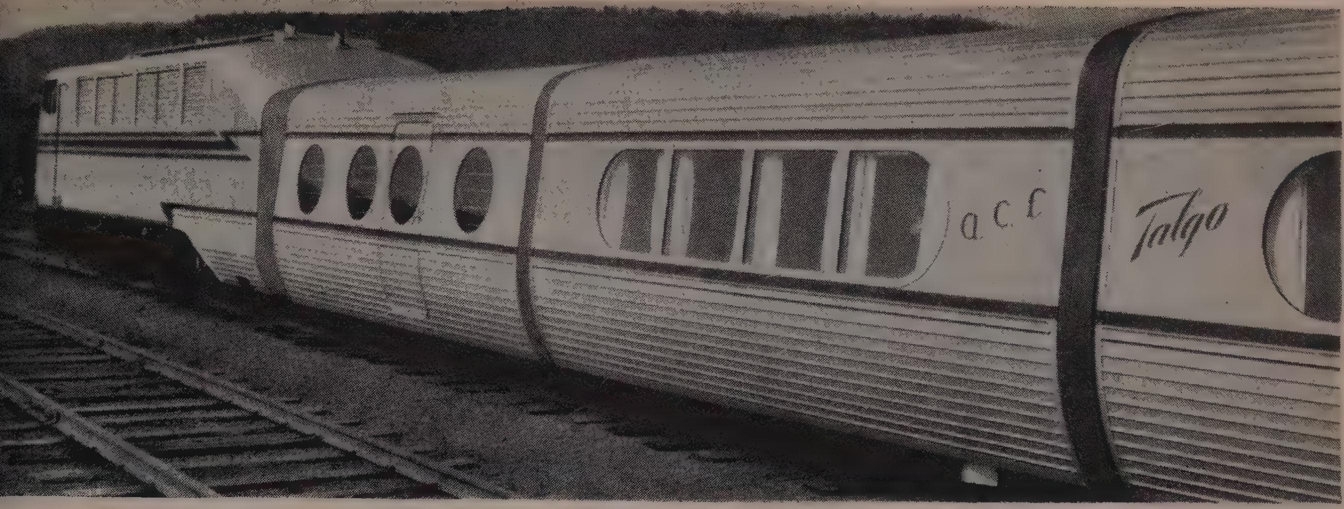
In order to offset wage increases and high costs of materials, the railroads made several applications to the Interstate Commerce commission in 1949 for authority to increase freight and passenger rates. The commission responded favourably but not to the full extent requested. In January the railroads were benefited by an increase of 5.2% in freight rates, authorized in December. That was designated as an interim increase to afford partial relief while the commission deliberated further. The request had been for an increase of 13%. The commission's final decision, in August, was to permit, effective Sept. 1, an average advance of 9.1%, inclusive of the 5.2% interim increase effective in January.

An increase of 12.5% in passenger fares, exclusive of suburban service, was sought by the eastern railroads in June. It was approved in full, effective Nov. 28. On the question as to whether the railroads, by such a rate advance, would be "pricing themselves out of the market," the commission accepted the opinion of railroad traffic officers that losses by diversion of passengers to other forms of transportation would be much less than gains in revenue from traffic which would be held. A minority of the commission, however, expressed the view that the higher fares would not be likely to bring in additional revenue and that "vacant seats rather than inadequate fares are the real cause of passenger deficits." In addition to this general increase in intercity fares advances were asked and authorized in suburban fares on individual railroads serving New York, N.Y., Chicago, Ill., and Boston, Mass. Further applications affecting suburban service were pending at the close of the year. In general, the scale of all passenger fares in Dec. 1949 was 44% higher than in 1939 in the east and 25% higher in the country as a whole.

In the field of labour relations, the railroad year 1949 had the following notable developments:

1. In March the nonoperating unions (trackmen, shopmen, stationmen, clerical forces and others except train and yard crews) were given a 40-hr. week with pay for 48 hr., plus an increase of 7 cents in the hourly rate. This was equivalent, in the case of a man who had been paid $1 per hour, to an increase to $1.27 per hour. The new basis gave him $50.80 per week of 40 hr. in contrast to $48.00 per week of 48 hr., an increase of 27% in the rate per hour. The actual effect of the new basis, however, was not as great as 27% because, after intensive study and rearrangements, it was found that a considerable part of the work formerly done on Saturday could be spread over the first five days of the week and that activities in track work, shop work and office work could be substantially curtailed on Saturday. Furthermore, the new basis of pay led to further use of labour saving machinery in maintenance and office work and acted as a spur toward higher efficiency in supervision. The principle of the 40-hr. week was not applied to train crews, who were paid on a mileage basis, nor to yard switching crews. A demand that the 40-hr. week should be extended to yard switching crews, together with changes in rules which would add to compensation, was in process of negotiation in December. The shortening of the work week and the further increase in the hourly rate to the nonoperating employees was the result of recommendations by a fact finding board and governmental mediation after direct negotiations between management and unions had failed.

2. The separately made demands of two unions for the employment of an additional engineman and an additional fireman on diesel locomotives were refused by management. Strike threats led Pres. Harry S. Truman to appoint fact finding boards, and in both cases the boards found no justification for the employment of additional men. The findings of the boards, however, were not accepted by the two unions, and the matter



THE "ACF-TALGO," a passenger train built by the American Car & Foundry Co. in 1949, modelled on the Spanish "Patentes Talgo." Its over-all height was almost four feet lower than current streamliners and it was almost 75% ighter, due to its design and all-aluminum construction

was pending in December.

3. Strikes tied up the operation of three separate railroads n 1949. The first, on the Wabash, was called in protest over delay in the settlement of an accumulation of grievances. The strike lasted eight days. The second, on the New York, Ontario and Western, was caused by the unwillingness of the trustees, because of the financial inadequacy of the bankrupt road, to put nto effect the wage increases granted by other railroads. The stoppage lasted 11 days. The most serious of the three was the strike of train service employees on the Missouri Pacific in September against delay in settlement of disputes over the interpretation of rules governing compensation. It lasted 45 days, completely tied up the operation of the railroad and brought hardship to sections of the southwest dependent on the Missouri Pacific for rail transportation. The settlement came after a report by a fact finding board, intervention by the governors of the several states affected and an agreement by the unions to arbitrate the disputes not settled by collective bargaining during the tie up.

4. The strikes of coal miners and steel workers in the second half of the year had very serious effect upon railroad traffic and revenues. The losses in traffic brought about curtailment in train service and the indefinite furlough of upward of 100,000 railroad workers. (*See* also Disasters; Interstate Commerce Commission; National Mediation Board; United States.)

(W. J. C.)

Chicago Railroad Fair.—The Chicago Railroad fair of 1949 set a new attendance record by attracting 2,732,618 visitors. Attendance in the second year thus exceeded the 1948 total of 2,500,813 visitors and brought the total attendance for the two years of the fair to 5,233,431.

As in 1948, the most popular feature of the 1949 Railroad fair was the "Wheels a-Rolling" pageant, which depicted the history of transportation over a period of nearly 300 yr. The paid attendance for 393 performances (out of a possible 400) was 1,450,068, giving a total gate of 2,619,545 in its two-year run. The pageant traced the growth of the United States from a colonial outpost to a mighty nation and showed the leading role played in this growth by railroads and the pioneers whose vision and industry made the railroads possible.

Contributing largely to the pageant's effectiveness was the four-dimensional element of time. Rather than a mere three-dimensional display of historic vehicles, "Wheels a-Rolling" re-created the time in which they actually were in use and reenacted the operation amid the authentic costumes, lighting and other trappings of each succeeding era. (L. R. L.)

Great Britain.—The financial results of the first year's workings of the British railways operated by the railway executive were published in 1949; they yielded net receipts of £26,257,737 in 1948, which were equivalent to an operating ratio: *i.e.*, percentage of working expenses to gross receipts, of 92%, but this sum was offset almost £4,000,000 by losses on road collection and delivery services. The net traffic receipts from the railway executive's steamship services, however, totalled nearly £3,000,000. The nominal amount of 3% Guaranteed British Transport stock, issued as compensation for the railway undertakings now vested in the British Transport commission, was nearly £927,500,000, but statistically it would be inaccurate to relate this to the net traffic receipts, because of transfers of docks, hotels and other railway-owned property to other executives. The final debit balance in net revenue account for 1948 of the commission's total undertaking was £4,700,000, and the annual report prophesied a deterioration in the financial situation for 1949; costs for labour and materials, in fact, continued to rise, and railway traffic receipts, more especially on the passenger side, to fall, actually by more than £6,000,000 during the first nine months of 1949.

There was no change in the level of charges, which had not been raised since 1947, but detailed studies had long been in hand with the object of designing a unified classification for freight by rail and road as part of a national system of transport charges.

Demands for wage increases except in minor instances were refused by a government appointed conciliation board, and 1949 was free of major labour disputes in the railway industry.

Interregional tests carried out with various classes of locomotives in 1948 provided useful data for the coming design of a few standard types for the British railway system. There was no freight car shortage, although output in 1949 was restricted by lack of steel. As regards track, a new standard was adopted using the flat-bottomed, or Vignoles, type of rail in place of the traditional British bullheaded rail held in chairs. Savings were expected in maintenance though the initial cost per mile was considerably higher, but shortage of labour for track forces and increased wage rates altered the economic balance between the two types of track. The use of prefabricated track for renewals was carried further in Britain than elsewhere.

In Northern Ireland the Ulster Transport authority took over the former London, Midland and Scottish railway in Ulster from the British Transport commission, and the Great Northern railway, providing the link between Belfast and Dublin, and so crossing the frontier, found itself in financial difficulties. In Ireland the transport system was the subject of an investigation which led to proposals to nationalize the Irish Transport company.

Europe.—The financial situation of the French national railways (S.N.C.F.), reported to be operating at an annual deficit of over £20,000,000, gave cause for considerable anxiety in 1949, and important changes occurred in the highest administrative posts. The government's proposals to deal with this question were published in Nov. 1949 in the form of decrees. They envisaged the close co-ordination of rail and road transport, the preparation of new tariff scales for both rail and road and the closing on a major scale of branch lines to passenger traffic. The growth and progress of the Auxiliary Transport Operating company (S.C.E.T.A.) was most satisfactory. In Paris a Paris Transport board was set up.

On the Belgian national railways (S.N.C.B.) electrified services were inaugurated between Brussels and Charleroi in October, marking a further stage in the large-scale scheme for main-line electrification; progress was made on the Ligne de Jonction linking Brussels-Midi with Brussels-Nord.

In the Netherlands the conversion to electric traction of the Maastricht-Eindhoven-Heerlen main line was completed in May 1949, involving 90 route-mi. This change-over was expected to reduce coal consumption by 300,000 tons.

In western Germany the improvement in facilities offered opportunities for the acceleration of international services in which the German railway (Bundesbahn) occupied a key position. The reconstruction of some of the Rhine bridges and the great strides which were made in Germany toward regaining the famed prewar efficiency of the Reichsbahn were noteworthy. Nearly 1,000,000 freight cars were loaded in Dec. 1948, as against only about 718,000 in Jan. 1948, and about 1,000,000 were placed for loading in June 1949 in the western zones; the financial situation, however, remained serious.

In Switzerland about 95% of the Swiss Federal railways were being electrified. It was deemed essential to develop some of the hydroelectric resources of the Gotthard to supplement the Amsteg and Ritom power stations.

In Spain 60 mi. were completed in the link between Lerida and the French frontier, and the Spanish national railways placed large orders for steam locomotives with Britain.

Italian state railways did fine work in postwar reconstruction. Damage was calculated as equalling 75% of the prewar capital investment of 49,500,000 lire. On a 1949 line basis the damage equalled more than £500,000,000 or 900,000,000,000 lire; by 1949, nearly 500,000,000,000 lire had been expended on reconstruction. Specific items completed in 1949 were the Pontelagoscuro bridge across the Po, costing 505,000,000 lire, and the new station at Verona. Marshall aid, through the European Recovery program, provided material assistance in framing these and other projects. Railway traffic reached 90% of the prewar level, and more than 5,000 passenger coaches were in service.

In Norway the conversion of another section of the Sorland railway in June to electric traction provided the Norwegian state railways with an electrified route from Oslo to Stavanger, except for the westernmost section Flekkefjord-Stavanger. Since 1938 the system's route mileage had increased 15%, and freight traffic was approximately 40% above prewar.

New construction in Yugoslavia included a 34-mi. standard gauge line between Kumanovo and Ovče Polje, and conversion to standard gauge of the 145-mi. Skoplje-Ohrid section proceeded. The relaying of the second track of the Belgrade-Zagreb main line was completed westward by April 1949.

In Albania, the 26-mi. standard gauge Durrës-Pecinj line and the connecting Durrës-Tiranë section of 18 mi. were to be completed in 1949. The Greek state railways route from Athens to Larissa was reopened in July; thus with two exceptions, Papapouli-Katerine and Skydra-Agia, the whole of the state railways system was reopened.

In Bulgaria a 22-mi. line between Lovech and Troyan was opened; there were also developments in the Pernik coal area and at Orekhvo on the Danube.

Russian developments were indefinite; but Kharkov was regarded as the centre of the diesel locomotive construction industry, and electric traction was inaugurated on the Nikopol-Dolgintsevo 74-mi. section near Odessa and on the Poti-Samtredia 28-mi. line just prior to 1949.

Asia.—Rehabilitation continued in Burma and Malaya, and the Palestine railways were extended. In China the position was confused, but information was available concerning Pakistan and India. As yet there were no through services between western Pakistan and India, though eastern Pakistan was served by through trains from Calcutta; speeds were still below the prewar level. Traffic volume was improving on the North Western railway of Pakistan, and receipts were double those of the 1940–47 period. Pakistan locomotives were being converted to oil burning. In India a surplus was expected from railway operation in 1949–50, and works under construction included a new line to provide a direct rail link with Assam. On the Great Indian Peninsula railway, the Mathura-Delhi route was being widened, and new all-metal coaching stock built in India was introduced.

Ceylon railways had long suffered from chronic deficits; the situation in 1949–50 was to be no exception; the system was heavily indebted to the government, but improvements were being effected.

The latest Iraqui state railways report referred to the success of its air subsidiary which was formed in 1946, to the progress made with the 70-mi. extension from Kirkuk to Erbil, a metre gauge line, and to new bridgework over the Euphrates. Orders had been placed in Britain for additional steam motive power.

Africa.—In Egypt the proposed separation of the railways and state budgets marked a return to earlier policy; in 1940 the policy was reversed because, it was claimed, no advantage accrued. Though Egypt adhered to steam traction, and new units were being received in 1949, the Tunisian, Moroccan and Algerian railways were all converted to diesel traction; new diesel-electric locomotives of 1,500 h.p. were working the Kenadsa coal trains in Morocco, and new freight cars were imported. In Algeria, 40 new diesel-electrics were placed in service, and the expressed intention was to dispense with steam locomotives; some sections of line were being converted to electric traction.

In Tanganyika a new railway was under construction in the Southern Province, as was also a branch from Kaliuwa to serve the lead mines. New locomotives for the Nyasaland-Trans-Zambesia railways were entering service, and in Rhodesia the new railway board for government-owned railways took charge in November. The Beira section became Portuguese property in April 1949.

The South African railways, so long a profitable concern, encountered financial difficulties, a deficit of £6,000,000 being recorded for 1948, and the Rates Equalization fund fell 60% in five years. Technical progress, nevertheless, continued, as for instance in the electrification in the Belleville area, and the large Prospect classification yard was being mechanized so as to handle 2,500 cars daily.

South America.—Nationalization of the British-owned railways in Uruguay became law in Jan. 1949, and the sale of the much larger British-owned lines in Argentina was finally completed in May. Large orders for diesel traction units were placed by Argentina in Hungary and the United States, the former for rail cars and the latter for locomotives. The financial situation on the railways caused concern, and a commission was at work to study a general revision of passenger fares and freight rates.

In Brazil, agreement was reached in April for the sale of the Leopoldina railway to the Brazilian government for about £10,000,000; arrangements were made to terminate the lease of the government-owned Great Western of Brazil, a 1,040-mi. metre gauge system. New railway construction continued in Brazil under the plan of the national railways department, with the primary object of linking the several state capitals and the national capital. New 3,000 h.p. electric locomotives were being placed in service on the Brazilian-owned former São Paulo railway, electrified on the 3,000 v. D.C. system.

Canada.—In Canada the Canadian National railway took over the Newfoundland railways. Other developments included the construction of the first mechanized classification yard by the Canadian Pacific in the Montreal area, and the building by the Canadian National of a large new freight station, Bonaventure station, at Montreal. The C.P. was entirely dieselized and new electric locomotives were placed in service at Montreal by the C.N.. A royal commission was appointed to report on the dominion's transport services in Feb. 1949.

Australasia.—The New Zealand government railways continued to operate at a heavy deficit, but train services were accelerated.

The major event in Australia was the publication of the important Elliot report on the Victorian railways, proposing the setting up of a Victorian Transport board. South Australia was undertaking the gauge conversion of part of its mileage, and pulverized coal was being developed for locomotive purposes in Victoria. (*See* also ELECTRIC TRANSPORTATION.)

(C. E. R. S.)

Rainfall: *see* METEOROLOGY.
Raisins: *see* FRUIT.
Ramjets: *see* JET PROPULSION.
Rapid Transit: *see* ELECTRIC TRANSPORTATION.
Rates of Exchange: *see* EXCHANGE CONTROL AND EXCHANGE RATES.

Rayon and Other Synthetic Fibres.

Production of rayon in the world during 1949 was about 2,690,000,000 lb., compared with 2,477,000,000 lb. in 1948. The United States share of the 1949 production was 36.9%, compared with 45.4% in 1948, 56.7% in 1945 and 19.1% in 1940.

Table I.—*United States Rayon Production*
(In millions of pounds)

	1944	1945	1946	1947	1948	1949
Rayon filament yarn	555	624	677	747	856	800
Rayon staple fibre	168	168	177	228	268	178

Of the other producing countries, the United Kingdom's monthly average in 1949 was 23,400,000 lb., compared with 19,500,000 lb. in 1948, an increase of about 20%. In the first six months of 1949, 132,600,000 lb. was produced in western Germany, compared with 55,600,000 lb. in the same period of 1948. France produced 54,400,000 lb. of rayon filament during the first six months of 1949, or a monthly average of about 9,000,000 lb., compared with a monthly average of 8,000,000 lb. in 1948. Japan, a large producer before World War II, gave indications that its 1949 goal of 128,000,000 lb. of filament and staple might be reached. More than 53,000,000 lb. were produced in the first half year, of which 30,000,000 lb. were filament and 23,000,000 lb. were staple. In 1948, the half year's total was 30,200,000 lb. Swiss rayon yarn production continued at about the same pace as in 1948 for the filament type, with a decrease in staple. For 1949, it was estimated that the total output would be 16,400,000 lb. of filament and 12,000,000 lb. of staple.

Rayon prices, in the United States, reflected the downward trend of other textile prices. The filament rayon averaged 73 cents per pound as against 75 cents per pound in 1948. Spun rayon yarn prices had a greater drop, the average for the year being 72 cents per pound as against the 1948 average of 90 cents per pound.

As was the case with rayon yarns, output of rayon fabrics in the United States also decreased. Total production was 1,950,000,000 yd., 11% less than the 1948 production of 2,190,000,000 yd.

Table II.—*U. S. Production of Rayon Broad Woven Fabrics*
(By types Except Tire Fabrics)
(In millions of linear yards)

Year	All-filament	All-spun rayon	Comb. filament and spun rayon	All other rayon mixtures
1939	998.0	176.8	22.8	97.2
1944	1,103.1	156.1	154.6	159.6
1945	1,028.7	161.9	159.1	170.4
1946	1,047.1	190.9	172.3	253.0
1947	1,210.3	294.4	182.2	170.0
1948	1,343.0	377.0	256.0	182.0
1949*	1,267.0	322.0	176.0	155.0

*Nine months actual, three months estimated.

In the United Kingdom, rayon fabric production increased during the year. Rayon woven cloth production amounted to about 564,000,000 yd. for the year, compared with 508,000,000 yd. in 1948.

From May 25 to July 6, 1949, a group of British rayon weaving workers visited the U.S. to study production methods, sponsored by the Anglo-American Council on Productivity of the European Recovery program. The group of fourteen men and two women included mill superintendents, loom fixers and weavers. The productivity team, as it was called, reported that in general no revolutionary differences in procedure were noted between the two countries, except that the U.S. operation was on a mass production basis. The most notable differences were: the preponderance of male labour in the U.S. mills, as contrasted with British mills where most employees were women; the acceptance by U.S. labour unions of new methods of reducing cost of production through higher work loads and speedier equipment; and the measures taken to avoid wasting the time of the worker through making it unnecessary for him to leave his machine.

In the marketing of rayon, discussions arose again in the U.S. as to the application of the name "rayon" to the acetate rayon yarns. Because of basic differences between the viscose-cuprammonium types (known as regenerated) and the acetate type, a sharp distinction had grown in the trade in describing popular mixtures of the two types under the words "rayon and acetate," and efforts had been made either to adopt a new coined name for the acetate type yarns, or call them simply "acetate." Technical societies, both in the U.S. and elsewhere, had discussed the subject in the previous two years without agreement. At the close of 1949, however, it was indicated that the Federal Trade commission in Washington, D.C., would be asked to approve a change in nomenclature to follow what had become an unofficial trade recognition, that "acetate" was a distinctive fibre from the original viscose type, which had been the prevailing yarn when the word "rayon" was adopted in 1937 by the commission. The commission, in turn, indicated that if the industry showed unanimity of opinion and practice on the pro-

POPULAR-PRICED NYLON BLOUSE marketed in 1949; dresses and men's shirts made of nylon were also mass-produced during the year as new dyes and weaves for nylon fabrics were perfected in greater variety

posed change, there would be an inclination to confirm it officially.

Nylon and Other Fibres.—The renewed agitation for the change was indirectly caused by the wide popularity in 1949 of nylon fabrics. Production of all-nylon fabric jumped from 32,500,000 yd. in 1948 to 87,700,000 yd. in 1949 (last three months estimated). In addition, there was a large quantity of nylon-and-acetate-rayon fabric made for which no yardage statistics were available. It was commonly of the mixture of 12% nylon and 88% acetate rayon. Some complaints were made to the Federal Trade commission that articles made of the nylon-and-acetate-rayon fabric were being marketed as nylon; or, if the words "acetate rayon" appeared at all, the reference was usually to "acetate" only, and in very small letters. The National Better Business bureau and other agencies called attention to the FTC's requirements that rayon content be identified properly, and that fibres used in mixtures be mentioned in order of their importance by weight. The ensuing discussion about fibre identification led to the reopening of the issue about identifying the two types of rayon, as well as nylon and other man-made fibres. It was expected, at the close of the year, that the Federal Trade commission would hold a trade hearing on the subject some time in 1950.

The newest fibre in commercial production, Orlon, was shown chiefly in curtain materials during 1949. Difficulty in finding commercially practicable dyes limited its introduction into other fields. In the course of the year, the Union Carbide and Carbon corporation announced the production of Dynel, a staple fibre produced from a copolymer of vinyl chloride and acrylonitrile. When extruded, the fibre was stretched, preshrunk, crimped and cut to staple length. Its dimensional stability was above the boiling point of water, which meant that it would neither shrink nor stretch in washing. The fabrics produced resembled cashmere, coarsehair or any grade of wool between the two, and this new fibre was expected to hasten the use of man-made fibres in the woolen and worsted industry. Its quick drying, easy washability and fire resistant qualities, combined with long wear, were expected to find a special place in knitting such articles as sweaters and socks, and in weaving blankets and insulation materials, as well as men's and women's suitings. Dynel staple was obtainable in both long and short staple, and blended well with the older fibres.

Films of 1949.—*Synthetic Fibers—Nylon and Rayon* (Encyclopædia Britannica Films Inc.). (I. L. Bl.)

Reclamation: *see* Forests; Irrigation; Soil Erosion and Soil Conservation.

Reconstruction Finance Corporation.

The Reconstruction Finance corporation, originally created by the congress Jan. 22, 1932, has succession through June 30, 1956 (public law 548, 80th congress, approved May 25, 1948).

A board of directors consisting of five members appointed by the president by and with the advice and consent of the senate is responsible for management of the corporation. The board consisted in 1948 of Harley Hise, chairman, Walter Lee Dunham, Harvey J. Gunderson, Henry A. Mulligan and W. Edward Willett. Their term was to expire June 30, 1950. At that time two directors were to be appointed for a term of one year; two for a term of two years; and one for a term of three years. Thereafter, the term of the directors would be for three years. The president designates one of the directors to serve as chairman of the board.

The outstanding capital stock of the corporation had been reduced from an original amount of $500,000,000 to $100,000,000. In addition to retirement at par of $400,000,000 of its capital stock a dividend amounting to $307,391,555 had been paid over to the United States treasury.

The purposes of the corporation are to aid in financing agriculture, commerce and industry; to encourage small business; to help in maintaining the economic stability of the country; and to assist in promoting maximum employment and production. To serve the objectives of the congress, the RFC is authorized to purchase the obligations of, and to make loans to, business enterprises, including railroads and air carriers, either directly or in participation with banks or other lending institutions; to make loans to financial institutions; to subscribe for or make loans upon nonassessable preferred stock of insurance companies; to purchase the securities of, or make loans to, municipalities and other public agencies to assist in financing projects authorized under federal, state or municipal law; and to make loans because of floods or other catastrophes.

The corporation is also authorized, pursuant to the provisions of the National Housing act, as amended, to make loans to, or purchase the obligations of, business enterprises producing prefabricated houses or prefabricated housing components, or for large-scale modernized site construction.

Total investments, loans, purchases and commitments made subsequent to June 30, 1947, may not exceed $3,550,000,000 outstanding at any one time.

Under the provisions of the RFC act, the corporation may not make loans to business enterprises unless the financial assistance applied for is not otherwise available on reasonable terms and such loans must be so secured as to reasonably assure repayment.

During the 1949 fiscal year 8,356 business enterprises applied to RFC for financial assistance in the aggregate amount of $1,456,000,000. Over the same period the corporation authorized 3,509 business loans amounting to $349,900,000 and bank participation in 1,085 of these loans amounted to an additional $39,600,000.

Participation loans are of two general types, immediate participations and deferred participations. In the case of an immediate participation, the entire loan is disbursed by the RFC and the bank immediately purchases an agreed percentage or the bank makes the disbursement and RFC purchases a portion of the loan. A deferred participation contemplates an agreement between the RFC and a bank under the provisions of which the bank disburses the loan and RFC agrees to purchase a stipulated percentage of the unpaid balance when and if called upon to do so by the bank. In deferred participation loans RFC's participation is limited to 70% of the balance of the loan outstanding at the time of disbursement in instances where the total amount borrowed is $100,000 or less and the corporation's participation may not exceed 60% of the balance outstanding at the time of disbursement in cases where the total amount borrowed is over $100,000.

Of all business loans authorized during the fiscal period, approximately 88% of the number were for $100,000 or less and 52% did not exceed $25,000. At the close of the fiscal year 5,187 business loans were outstanding in the aggregate amount of $384,345,000. In addition, the corporation had outstanding at the end of the fiscal year commitments to participate in 6,999 business loans made by banks totalling $173,819,000.

Other loans or purchase of obligations authorized during the period included those to municipalities and other public agencies amounting to $27,300,000; catastrophe loans aggregating $3,800,000; railroads $968,000; and loans on preferred stock of insurance companies $3,000,000. As of June 30, 1949, total loans and investments outstanding aggregated approximately $998,522,000.

The Federal National Mortgage association, an RFC subsidiary, maintains a secondary market for the purchase at par and accrued interest of mortgages on homes and rental housing projects insured by the Federal Housing administration or guaranteed by the Veterans' administration. Among other requirements, mortgages offered to the association for purchase must have been insured or guaranteed subsequent to April 30, 1948, the original principal amount may not exceed $10,000 for each family residence or dwelling unit; and the seller must be the original mortgagee. The purpose of the program is to encourage the construction of individual homes and rental housing projects and investment by private lenders in such home mortgages.

During the fiscal year 1949, the association purchased 22,554 home loans guaranteed by the Veterans' administration amounting to $126,000,000 and 40,408 home mortgages insured by the Federal Housing administration aggregating $297,500,000. At the close of the fiscal year the association had outstanding commitments to purchase 29,554 additional VA mortgages totalling $204,800,000 and 19,007 additional FHA insured mortgages in the aggregate amount of $282,000,000. As of June 30, 1949, the association held 22,520 mortgages guaranteed by the Veterans' administration amounting to $125,000,000 and 47,992 mortgages insured by the Federal Housing administration totalling $339,376,000.

In 1949 more than 100,000 FHA insured mortgages and VA guaranteed mortgages owned by the RFC and Federal National Mortgage association were offered for sale to eligible purchasers at prices ranging from $100\frac{1}{2}$ to $102\frac{1}{4}$ to yield from approximately 4% to approximately $4\frac{3}{4}\%$.

The government-owned tin smelter at Texas City, Tex., was constructed by Reconstruction Finance corporation as a national defense measure in 1942 and represented an investment of approximately $10,000,000. The corporation was authorized to operate the smelter and to perform other related functions until June 30, 1951. These facilities were operated for the account of the corporation during the fiscal year 1949 and over that period the corporation's sales of tin amounted to $159,000,000.

RFC is charged with the responsibility of carrying on the production of synthetic rubber in the government-owned manufacturing plants and other related activities in connection with the program. Of the original 51 manufacturing plants and related facilities which were financed by the corporation, 18 were engaged in active production on June 30, 1949. These facilities were being operated for the account of RFC and sales of synthetic rubber by the corporation for the fiscal year amounted to $173,400,000. In addition to the active plants, 11 such facilities and projects costing approximately $193,700,000 were held in stand-by condition. During the year, eight of the copolymer plants were expanded for the production of "cold rubber" and at the close of the fiscal year five of them had produced a total of 24,240 long tons of the product.

The five government-owned fibre plantations located in Central America, Panamá and Haiti were continued in operation for the account of RFC. During the 1949 fiscal year approximately 40,634,000 lb. of fibre were produced and 46,400,000 lb. of the product were sold for $10,140,000.

Plants and other facilities acquired by RFC during World War II, and property, plants and equipment formerly belonging to Smaller War Plants corporation (the latter transferred to RFC for liquidation purposes) were disposed of during the 12 months ended June 30, 1949, for a consideration of approximately $54,524,000. At that time the balance of such property represented an investment of approximately $78,776,000, exclusive of the synthetic rubber plants, the tin smelter and the fibre plantations. Liquidation of these properties was to be continued as rapidly as circumstances permitted.

On June 30, 1948, the corporation had 5,337 employees, compared with a peak employment of 12,299 in July 1946. As of June 30, 1949, 1,499 employees comprised the Washington staff and 3,100 were employed in the corporation's 31 regional offices, a total of 4,599 employees as of the close of the 1949 fiscal year. (HAR. H.)

Red Cross.

United States.—High lights of American Red Cross activity during 1949 included steady growth of the national blood program and record peacetime achievement in the organization's multiple services to the armed forces. The year was also marked by the appointment on Sept. 22 of Gen. George C. Marshall as president of the organization.

The Red Cross blood program, inaugurated Jan. 12, 1948, boasted more than 30 regional programs serving approximately 1,400 hospitals and 70 clinics with blood and blood derivatives at the end of 1949. About 550 Red Cross chapters in 35 states were participating in the program, which had collected approximately 400,000 pints of blood since its inception.

More than 2,000 Red Cross workers served the armed forces at 1,300 military installations and 123 military hospitals in the United States and overseas. In the 1949 fiscal year they handled 775,152 cases concerning servicemen and their families. Home service workers in Red Cross chapters handled 793,594 cases of servicemen and dependents. Financial aid to military personnel and their families from fieldworkers and chapters totalled

VENEZUELAN SCHOOL CHILDREN viewing some of the 5,000 pieces of art prepared by U.S. youngsters and sent abroad for exhibit in 1949, as part of a new American Junior Red Cross international art program

$5,406,000.

In the same period 1,315,098 cases involving veterans and their dependents occupied chapter workers and a monthly average of 96,000 claims cases were assisted by Red Cross representatives stationed at 84 Veterans' administration offices. Financial aid to veterans amounted to $3,431,000. In 113 VA hospitals, professional Red Cross staffs worked with a monthly average of 20,156 volunteers to help VA staffs in medical, recreational and welfare programs that reached an average of 135,000 patients each month.

The Red Cross assisted 228,515 persons in 330 domestic disaster operations during the 1948–49 fiscal year at a cost of $6,574,741. The Red Cross recruited 1,572 nurses to provide emergency care to disaster victims. They served 12,667 days in 72 disaster operations.

Additional nurses were recruited by the Red Cross to serve in polio-stricken areas where they supplemented local nursing resources in the worst polio epidemic in late years. During the year 126,894 home nursing certificates were issued.

Approximately 220,000 Red Cross volunteers, in nine organized services, gave 11,900,000 hours of service during the year. About 300 federal hospitals, 1,000 civilian hospitals and 1,500 other agencies received Red Cross volunteer service. Volunteers made and repaired 763,000 garments, produced 18,608,000 surgical dressings, drove 9,188,000 mi. and provided 2,443,000 individual servings of food.

Red Cross emphasis on safety continued, 38 aquatic schools attracting during the summer of 1949 about 3,500 students for qualification as instructors in water safety, first aid and accident prevention. In total: 383,557 certificates in first aid; 52,195 in accident prevention; 568,958 in swimming; and 108,410 in lifesaving were issued during the year.

Assistance to Red Cross societies and distressed peoples in foreign countries continued on a limited scale. Material aid valued at $615,306 went to 20 countries; consultants on Red Cross activity worked with 13 sister societies; and 34 Red Cross workers from 15 countries benefited from study visits, scholarships and fellowships in the United States. Approximately $135,000 worth of relief supplies were rushed to areas devastated by earthquakes in Ecuador, and three American Red Cross disaster workers were sent to advise the Ecuadorian Red Cross on emergency relief and disaster preparedness programs.

The American Junior Red Cross sent approximately $1,500,000 worth of school, health and recreational supplies to children in war-scarred countries and continued its programs for promoting international understanding and friendship. Included in supplies packed and shipped by Junior Red Cross members were 469,083 gift boxes and 215 educational chests. (H. Bm.)

World.—The outstanding event for the Red Cross world in 1949 was, strictly speaking, not a Red Cross action but the meeting in Geneva, Switz., April 21–Aug. 12, of representatives of 58 nations for the revision and drafting of what are known as the humanitarian conventions.

The three conventions revised were: Convention for the Adaptation of Naval Warfare to the Principles of the Geneva Convention (1907); Convention for the Protection of Sick and Wounded of Armies in the Field (1929); and Prisoner of War Convention (1929). A fourth, new convention—Convention for the Protection of Civilian Persons in Time of War—drafted at a meeting of representatives of national Red Cross societies in Geneva in Aug. 1946, and approved by the 17th International Red Cross conference, Stockholm, Swed., in 1948, was adopted. Formal signature of these conventions took place in Geneva on Dec. 8, 1949.

Second in importance in the Red Cross world during 1949 were relief activities undertaken by the International Red Cross at the request of the United Nations.

On Jan. 1 the League of Red Cross Societies assumed responsibility for the care of 330,000 Palestine refugees in Syria, Iraq, Lebanon, Jordan and Egypt; the International Committee of the Red Cross for 395,000 in northern and central Palestine; and the American Friends Service committee for 212,000 in southern Palestine. This program was financed at a cost of approximately $2,000,000 monthly by voluntary national contributions through the United Nations and assistance from the International Children's Emergency fund, World Health organization, International Refugee organization, Food and Agriculture organization and national Red Cross societies.

A second mandate given the International Red Cross by the U.N. general assembly in Paris, Dec. 1948, was for the repatriation of 25,000 Greek children separated from their families and living in Czechoslovakia, Hungary, Yugoslavia, Bulgaria and Rumania. Lists of the names and descriptions of approximately 6,000 of these children compiled by the Greek Red Cross were transmitted by the International Red Cross to the Red Cross societies of the above-mentioned countries for use in identifying the children, but at the end of Oct. 1949 only 138 in Czechoslovakia had been identified.

Appeals also were received by the League of Red Cross Societies from the Red Cross societies of Poland and the U.S.S.R. to assist in identifying and repatriating Polish and soviet children in the western zones of Germany and Austria.

Additional relief actions were undertaken by the League of Red Cross Societies in India and Pakistan (assistance to 600,000 refugees); Greece (706,000 refugees); Germany (11,000,000 refugees); Ecuador (earthquake); and Guatemala (floods). Assistance to the International Refugee organization in the resettlement of displaced persons continued. The work of the Scandinavian Red Cross societies with the International Children's Emergency fund and the World Health organization in combating tuberculosis among children was extended to Asia and South America.

The International Committee of the Red Cross was active as a neutral intermediary in the protection and exchange of prison-

LAST JEWISH REFUGEES to leave the British internment camp at Cyprus, shown boarding ship for Israel; they arrived at Haifa, Israel, in Feb. 1949

ers in Palestine, Kashmir and Indonesia.

Membership in the League of Red Cross Societies was increased to 68 nations by the addition of the Red Cross societies of Ethiopia and Jordan. The 21st meeting of the board of governors of the league was scheduled to be held in Monte Carlo, Monaco, in Oct. 1950. (H. W. Dg.)

Reforestation: *see* Forests.
Reformed Church: *see* Presbyterian Church.

Refugees. Progress in the repatriation and resettlement of the 700,000 Polish, Ukrainian, Baltic and Yugoslav refugees and displaced persons remaining in Germany, Austria and Italy as the aftermath of World War II continued during 1949. Their re-establishment in ways of living more normal than those of the displaced persons camps which had been the abode of many since 1939 was the special concern of the International Refugee organization (I.R.O.) which came into formal existence as a specialized agency of the United Nations in Aug. 1948. This organization and its predecessor agency, the preparatory commission for the I.R.O., had undertaken in July 1947 to attack the problem of more than 1,000,000 refugees and displaced persons in central Europe who had refused repatriation to their home countries of eastern Europe because of political and boundary changes in those countries resulting from the war.

Italy and Switzerland joined the organization during the year and added their efforts to those of the other members—Australia, Belgium, Canada, China, Denmark, the Dominican Republic, France, Guatemala, Iceland, Luxembourg, the Netherlands, New Zealand, Norway, the United Kingdom, the United States and Venezuela—to make possible the application of more than $150,000,000 in resources annually to the resolution of the problem. These funds were used to provide care and maintenance in camps, clothing, medical services, vocational training, a tracing service for missing persons and, most important, transportation to overseas countries of resettlement. The United States contributed more than $70,000,000 to the I.R.O. budget for the fiscal year 1949–50.

During the calendar year 1949, 318,096 were resettled or repatriated from Germany, Austria and Italy. The I.R.O. maintained a fleet of 35 ships engaged in the movement of refugees to overseas countries such as Australia, Brazil, Canada, the United States and Venezuela. The movement of Jewish refugees to Israel, which had totalled more than 143,000 since 1947, was organized by the Jewish Agency for Palestine with funds supplied by the I.R.O. By Jan. 1950 less than 40,000 Jewish refugees remained in central Europe awaiting disposition. More than 100,000 persons were transported to the United States by I.R.O. under the provisions of the U.S. Displaced Persons act of 1948, which provided for the admission of 205,000 by June 30, 1950. Approximately 85,000 were moved to Australia and 27,500 to Canada.

At the meetings of the general council of I.R.O. in July and Oct. 1949 at Geneva, Switz., plans were adopted looking toward the conclusion of operations; it was envisaged that all of those qualified for admission to receiving countries of immigration would have been resettled by the spring of 1951. Consequently it was decided to discontinue care and maintenance of refugees in the camps after June 30, 1950, and to continue thereafter the resettlement of those in process of movement by that date. These decisions left unresolved two important problems affecting refugees, namely provision for the continuing care of the nonresettleable refugees, including some 26,000 persons who would require institutional care after June 30, 1950, and the legal protection of all refugees pending their acquisition of a citizenship in a new country of residence.

The nonresettleable refugees, generally referred to as the hard core, consisted of the aged and infirm, those suffering from tuberculosis, the blind and deaf and those otherwise physically handicapped and unable to meet the rather high health requirements of immigration countries, or lacking sponsors to guarantee that they would not become public charges after admission. Some of the member governments of I.R.O. such as Belgium, New Zealand, the Netherlands, Norway and the United Kingdom were giving serious consideration at the end of the year to the acceptance of limited numbers of these permanently dependent refugees. Israel offered to receive all remaining handicapped Jewish refugees in consideration of financial assistance from I.R.O. in the construction of hospitals and other institutions for their permanent care. The I.R.O. allocated $22,000,000 in its budgets for the fiscal years 1949–50 and 1950–51 as its contribution toward the provision of continuing care for the nonresettleable group.

The continuing legal protection of refugees after the termination of I.R.O. services was considered by the Economic and Social council of the United Nations at its ninth session in July in Geneva and by the general assembly at its fourth session in New York in Nov.–Dec. 1949. Following the pattern established by the League of Nations, the general assembly decided to establish on Jan. 1, 1951, the office of high commissioner for refugees for a period of three years, with headquarters in Geneva. The Economic and Social council also established an *ad hoc* committee to convene in Jan. 1950 at Lake Success, N.Y., to revise and to consolidate in one draft convention all the existing international arrangements, agreements and conventions for refugees.

The United Nations Relief for Palestinian Refugees, created by the general assembly of the United Nations at its third session in Paris in 1948, administered relief during the year to 750,000 refugees from the conflict in Palestine and an additional 200,000 Arabs whose means of livelihood in Arab Palestine, Jordan and the Gaza area had been affected by the armistice agreements still in effect at the end of the year. Thirty-three governments had contributed a total of $32,000,000 in funds and supplies to maintain, house and clothe these refugees pending a political settlement which the Palestine Conciliation commission, also established by the United Nations, was endeavouring to achieve. The direct administration of relief under the auspices of the U.N.R.P.R. was conducted by the International Committee of the Red Cross, the League of Red Cross Societies and the American Friends Service committee, assisted by many other voluntary agencies.

As the political settlement was delayed and the repatriation of the refugees to their former homes in Israel and Israeli-held areas appeared unlikely to take place, the Palestine Conciliation commission organized the Economic Survey mission for the Middle East, which recommended to the U.N. General Assembly the creation of a new agency to undertake a works program for the refugees to supplant the relief program by Dec. 30, 1950.

The general assembly voted on Dec. 8, 1949, to establish the United Nations Relief and Works Agency for Palestine Refugees to take over the relief activities of the United Nations Relief for Palestinian Refugees, scheduled to discontinue operations by April 1950. A budget of $54,900,000 for 18 months was adopted, including $33,700,000 for relief and works projects during 1950 and $21,200,000 for works projects for the period Jan. 1–June 30, 1951. This action of the general assembly recognized that continued assistance to Palestine refugees was necessary to prevent starvation and distress and to further peace and stability in the area, and that constructive measures looking toward the rehabilitation of the refugees would have to be undertaken to replace the administration of direct relief. The resolution provided that the director of the agency was to be appointed by the secretary-general of the United Nations in consultation with the members of an advisory commission consisting of representatives of France, Turkey, the United Kingdom and the United States, and that he was to be responsible directly to the general assembly.

Only limited progress was made during 1949 in the integration into the economy of the three western German zones of the 8,000,000 German refugees formerly members of the minorities of Poland, Czechoslovakia and Hungary. Many of these had been expelled in 1945 and 1946 under the terms of the Potsdam agreement, which gave formal recognition to a mass exodus resulting inevitably from the former German occupation and administration of these countries. Their numbers were increased during the year by a steady flow of infiltrees from the eastern zone of Germany and from that part of Germany administered by Poland. Their presence greatly intensified the social, economic and political problems of postwar adjustment confronting the German Federal Republic.

Efforts to amend the Displaced Persons act of 1948 persisted in the U.S. congress. Amendments increasing the numbers to be admitted to 339,000, eliminating the preferences for farmers and for persons from *de facto* annexed areas and moving the eligibility date forward from Dec. 22, 1945, to Jan. 1, 1949, passed the house of representatives, but remained under consideration by the senate.

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FILMS OF 1949.—*A Letter of Thanks* (CARE Film Unit); *Answer for Anne* (Caravel Films); *Penny's Worth of Happiness* (A. F. Films Inc.); *Stranger at Our Door* (Family Films, Inc.).

(G. L. W.)

Relay Racing: *see* TRACK AND FIELD SPORTS.

Relief.

The pattern of assistance in the British Commonwealth of Nations was beginning in 1949 to assume a uniformity among its constituents. The one exception was the Union of South Africa, where all nonwhite people had been excluded from the benefits of social legislation as a phase of their general disfranchisement.

Canada, Great Britain, Australia and New Zealand during the year liberalized their provisions for assistance either to meet the increased cost of living or to broaden the basis of eligibility. Australia made the most marked increase in all phases of its public assistance program to meet the increased cost of living, with Canada undertaking a more piecemeal program. Great Britain's improvement was largely in the way of more efficient and liberal administration.

Following the lead by New Zealand in establishing in 1942 an inclusive scheme to cover all possible occurrences of need, both Australia and Great Britain brought their varied provisions for assistance into relationship with each other, filling the gaps between them and so approximating the unitary program of New Zealand. The year 1949 was the first full year in which their revisions were operative. The Canadian parliament discussed the possibility of integrating its various dominion and provincial provisions into a single plan, which would "cover all citizens in every circumstance where an individual or family was for any reason deprived of the opportunity of earning a living." The difficulty of achieving such a goal in Canada was probably contitutional as well as administrative, but the same barrier stood n the way of a national plan for Australia and was met by contitutional revision.

In the area of international comity, New Zealand had also led he way in 1942 by arranging with Australia for granting the benefits of old-age and invalidity assistance to citizens of one country living in the other. During 1949 the two countries exended their reciprocal services to include beneficiaries of widows' allowances, child endowment, unemployment assistance and ickness. Great Britain entered into a similar arrangement with France, covering sickness, maternity, industrial accident and death, and was negotiating with Belgium, Luxembourg and the Netherlands to establish a similar pattern of comity with them. During the year the parliaments of New Zealand, Australia and Canada discussed the possibility of a comprehensive plan of nterchange of benefits between all the dominions of the British Commonwealth of Nations, so that a citizen of any one of the nations would be eligible, wherever he might be residing.

In the United States there was a stalemate on all expansions of social security in 1949, except a liberalizing of old-age and urvivors insurance to cover rural workers and the self-employed. But because of the conservative nature of old-age nsurance in the United States, which does not attempt to compensate those who are older than the average at time of its nception, the benefits of its provisions do not reach even mininum adequacy much before 35 or 40 yr. after its start. For nstance, the old-age insurance program entered its 15th yr. of operation during 1949. There were slightly more than 1,500,000 persons drawing its benefits; but the average amount received by each beneficiary was less than $35 a month. Consequently, old-age assistance, which theoretically should merely fill in the gaps not protected by insurance, went to more than 2,600,000 persons with an average payment of slightly less than $44 a month. That is, in half a generation after its passage, the need of the aged was carried primarily by the assistance provision with its means test and supervision, not by insurance to which he beneficiary has a vested right.

Bills were introduced into the congress to cover the needs of hose not protected by the provisions of the Social Security act —the unemployed, the sick and the handicapped dependent; but they did not reach the voting stage by the end of the year.

The results of Community fund solicitations in the United States indicated that in 1949, 193 chests raised $76,632,105; his represented a 2.7% increase over 1948. (*See* also Child Welfare; Community Chest; Red Cross; Social Security.)

(F. J. B.)

Religion. Religion in 1949 was deeply involved in the secular conflicts and unrest of the times. In international atherings of the same church families, rather mild divergencies developed between representatives of Great Britain and the U.S. over political ideologies. Nationalist ferment was a disurbing force in the religious situation throughout the entire ast. Indigenous religions were quickened and made militant by the new independence of their peoples. In areas of political disorder, Christian institutions were seized and restrictions put upon property and funds of mission enterprises. Indian naionals viewed their previous church relationships from a new perspective and were sometimes inclined to blame the squabbles of western sects for their own divided condition.

Definite threats to religious liberty appeared in Mohammedan ands such as Iran and Egypt. Chinese Christianity, caught in he flood of the Communist advance, was tried by fire. On wide fronts between east and west a bitter struggle went on between the churches and the Communist governments. In general the Roman Catholic Church bore the major brunt of the attack; while expressing sympathy for the Roman Catholic plight, the World Council of Churches pointed out Catholic infringements on Protestant liberties in Spain and Latin America.

SCENE from the Wichita Mountain Easter Sunrise pageant, an annual event attended by thousands near Lawton, Okla. The pageant was performed in April 1949, with a cast of some 3,000 persons

The theoretical position of all major branches of Christendom was the same, namely that the basic human rights derived from God are above the authority of the state, and that the natural moral law is supreme to legal enactments.

Interpretations of religious liberty, however, under this principle continued to differ greatly. The Federal Council of Churches of Christ in America proposed top-level conferences between Roman Catholic and Protestant authorities in the face of common danger to try to reach an understanding on this point. The United Nations assembly passed a resolution expressing concern for denials of religious liberty throughout the world.

War and Peace Among the Churches.—The Hebrew, Christian and Mohammedan faiths were involved in the issue of the internationalization of Jerusalem as the site of religious shrines. The Roman Catholic Church pressed for this, and many Protestants thought it appropriate.

Catholic-Protestant relations in the United States reached a new peak of bitterness in the controversy over public aid to sectarian education, personalized in interchanges between Mrs. Franklin D. Roosevelt and Francis Cardinal Spellman. The Federal Council of Churches proposed as a solution that public support should go to nonsectarian schools only, but that health and welfare projects for children should be considered as a separate matter, without regard to enrolment in public or religious schools.

The great middle section of Protestant churches in the United States, united in the Federal council and numerous national and local organizations, was violently opposed by the fundamentalist American Council of Christian Churches. At a conference in Ceylon of the younger churches of Asia designed to define their relations with the World council, this agency sent emissaries to denounce the council. It also sent representatives to a delegated conference on Christian unity, called by eight denominations at Greenwich, Conn., in December.

Peace between the churches made progress in spite of conflict. There were steady evidences of assimilation, marked for example by the fact that sects previously regarded as irregular were winning acceptance in cooperative work, usually first at local levels. Divergent theologies which had battled through the centuries began to reach agreements through a "Bible-centred" approach. Scholars of the World Council of Churches whose theoretical positions seemed abhorrent to each other found that they could agree on the meaning of specific passages of Scripture as the Word of God concerning human life. (See CHRISTIAN UNITY.)

Religious Organization and Activity.—As an organization the Christian Church in the United States showed continued strength and vitality. Of the population, 53% was enrolled in formal membership, and if all denominations counted their baptized infants, as many of them do, the figure would approximate 59%. For the first time, the financial income of 52 major non-Roman churches was beyond the billion dollar mark, and the per-member rate of giving steadily increased.

Evangelism was aggressively pressed. The Church of England conducted an intensive campaign in London, with a force of 15,000 missioners using 55,000 billboard announcements, loud-speakers and all modern instruments of publicity. The Federal Council of Churches launched a united evangelistic campaign, supplementing that of the major denominations, to continue through 1950.

There was increasing adoption of the technical instruments of public appeal. Public relations and varied publicity were stressed. The Methodist Church in the United States circulated 5,500,000 pamphlets on the fundamentals of the faith. Extensive experiments in the use of television were launched and the Protestant Radio commission greatly extended its work.

Religion and the Secular Climate.—The tone of secular thinking had been obviously modified; its mood was more congenial to religion. The decision of the United Nations to open its sessions with a period of silence and meditation was one symptom. The advertising clubs of the U.S. actively backed a Religion in American Life campaign during the fall of 1949, under the leadership of Charles E. Wilson, president of the General Electric company. The appreciation of religion by social conservatives fearful of revolution might not reveal the purest of motives; but a growing sincerity and wistful concern for the need of the world was widely prevalent. (*See* also CHRISTIAN UNITY; CHURCH MEMBERSHIP; also under separate denominations.)

FILMS OF 1949.—*In the Good Ground* (Religious Film Association).
(H. P. D.)

Religious Denominations: *see* CHURCH MEMBERSHIP.

Religious Education.

Protestant.—In July 1949 the first Curriculum Conference for Protestant Churches in the Spanish-speaking countries of Latin America was held in Buenos Aires, Argentina, with 14 countries represented. The World Council of Christian Education shared in sponsorship of the conference, which was interdenominational as well as international in character. Basic plans were made for the preparation of new and better curriculum materials for Sunday schools and other institutions of Christian education than had heretofore been available.

The World Christian Youth commission met in Switzerland in July, composed of representatives of the World Alliance of Young Men's Christian associations, the World's Young Women's Christian association, the World's Student Christian federation, the World Council of Churches and the World Council of Christian Education. Two major proposals were adopted: (1) to hold an enlarged meeting in Asia in 1952 and (2) to place particular emphasis upon finding ways of winning young people in industry, especially in Asia where industrial development was relatively new.

At its annual meeting early in 1949, the International Council of Religious Education adopted a statement prepared under the chairmanship of Luther A. Weigle of Yale university divinity school, expressing the belief that religion and education are inseparably related and that any attempt to separate them does violence to both.

In August the board of managers of the World Council of Christian Education met in London. Considerable attention was given to the plans for the World Convention on Christian Education and the World Institute on Christian Education scheduled to be held in Toronto, Canada, in the middle of 1950.

Orthodox.—A thoughtful interpretation of religious education in the Orthodox Church appeared in *World Christian Education* (published by the World Council of Christian Education), first quarter, 1949, under the authorship of Sophie Koulomzine, a member of the Russian Orthodox Church. She pointed out that despite the lack of a conscious, organized effort on the part of the Orthodox Church to provide religious education, the church continued its strong hold on children as was evidenced in the U.S.S.R. On the other hand, children and young people in the Orthodox Church who had no normal Christian homes, who could not attend church services and did not take part in the life of the church were likely to be lost. It was this fact which led some of the officials of the Orthodox churches to become concerned about the needs for religious education imposed by contemporary conditions.

In Jan. 1949 a small meeting of young people from Orthodox churches was held in Switzerland under the sponsorship of the youth department of the World Council of Churches. This meeting resulted from the fact that there were Orthodox representatives in the World Council of Churches itself and also in the youth department committee who were interested in strengthening youth work in the Orthodox churches. (F. L. KP.)

Roman Catholic.—The Catholic school system, with five classes of institutions (parochial or elementary, secondary, normal, seminary and university) continued to expand in 1949. There was an increase of 153,392 pupils in 7,777 elementary parish schools to a total of 2,351,604, and an increase of 7,018 in students attending 541 private elementary schools, bringing that total to 83,646. Parish and diocesan high schools reported enrolments of 319,599 in 1,596 schools, and 798 private high schools were teaching 189,125 students. Students in seminaries and novitiates reached a record total of 26,215, an increase of 2,514 over the previous year. There were 64 diocesan seminaries, 337 religious-order seminaries, or novitiates and scholasticates Colleges and universities for men and women numbered 228, with 240,048 students.

During the summer of 1949 a six-week institute for educators of the deaf was conducted at the Catholic University of America, Washington, D.C. The second season of the Catholic-sponsored adult education program, presenting studies in theology, philosophy, art and the social sciences, was opened in Washington on Oct. 10. The education department of the National Catholic Welfare conference continued its work of collecting and furnishing to school officials and the general public data concerning Catholic education. A survey of secondary education was published by the department in 1949.

In April a new catechism setting forth the teachings of the Roman Catholic Church was issued for the use of high school nd college students, Newman clubs and other adult study units. Though the church's doctrine remained the same, new points vere emphasized because the ways of living had brought out ew problems. The new catechism clearly stated that a tele-ised service did not fulfil the obligation of attending Sunday Mass. Euthanasia was condemned. For the first time in the Baltimore series, the Catholic stand against cremation was ex-licitly set forth. (J. LaF.)

Jewish.—Jewish education in European lands, despite im-rovements since World War II, was prevented from making reater strides because of the dearth of up-to-date textbooks and ther pedagogic devices. In the study of conversational Hebrew nd current Hebrew literature some aids were obtained from Palestine. The transmission of knowledge of Jewish history and eligion, however, was not very much advanced from the stand-rds which prevailed in the old cheder. The backwardness was lue to the absence of means, which accounted for poor pay for eachers and the resignation to low professional standards and dministrative procedures. The dearth of dollars made difficult he purchase of textbooks and equipment developed in the United States and adaptable to European schools.

In the State of Israel Jewish education was intensive and dvanced in both the traditional and the modern schools. Norms nd standards for the knowledge of Hebrew language and litera-ure were set up and were being utilized by Jews in other lands.

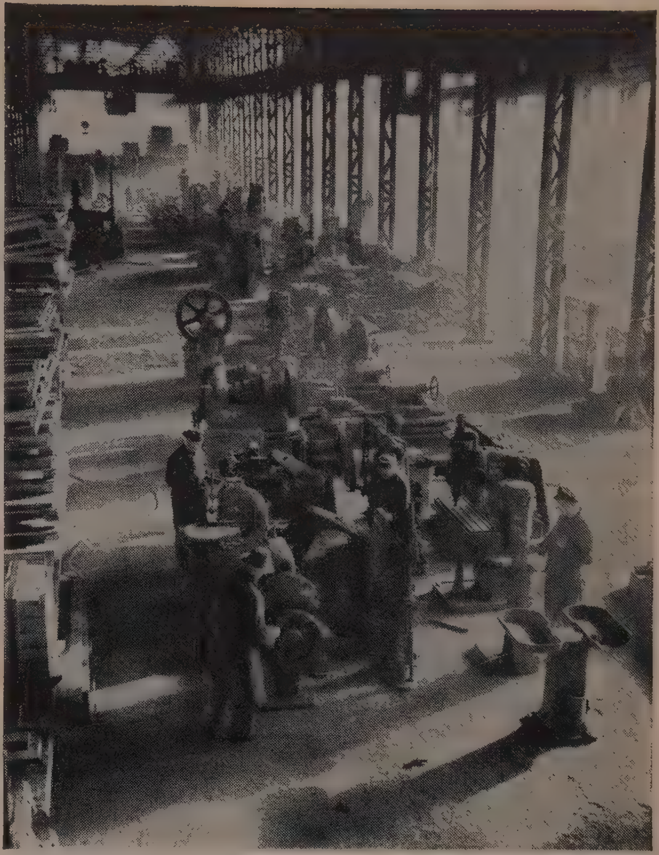
In the United States the most notable development was the nultiplication of all-day Jewish schools. The increased use of ummer camps for educational as well as recreational purposes nd the provision of improved facilities to enable children in ural districts to come to a central point where they could ob-ain a better Jewish education were also items of achievement luring 1949. (B. H.)

Reparations.

Germany.—Important agreements made during 1949 by the United States, France and he United Kingdom substantially lowered the level of future eparations removals from western Germany and made possible n early termination of the program.

The Economic Cooperation administration announced in Jan-ary that Administrator Paul Hoffman had accepted the recom-nendations made by an industrial advisory committee headed y George M. Humphrey urging the retention in Germany of ertain equipment in 167 of the 381 plants which it had sur-eyed. In February Lewis Douglas, U.S. ambassador in London, England, initiated formal discussion of the recommendations vith British and French officials in conjunction with a report rom the military governors of the three western zones on a evised list of prohibitions and restrictions which should be ap-lied to German industry on security grounds. In the course of hose negotiations, five steel plants, three chemical plants and ertain equipment in another steel plant were removed from the ist of projected exemptions at the insistence of the British and French governments, thus reducing the number of exempted lants from 167 to 159.

Formal announcement of the agreement reached was made n Washington, D.C., London and Paris, France, on April 13. The state department pointed out that the revision had been nade in order to bring the dismantling program into harmony vith the European Recovery program. Most of the 159 plants vere located in the British zone, and the amount of equipment vhich had been scheduled for removal from them varied from single piece of equipment to the entire equipment of an op-rating factory. The affected plants included 32 plants in the teel industry (only 5 of which produced raw steel), 88 metal working plants, 32 chemical plants and 7 nonferrous metal plants. It was estimated that the exemptions would reduce by 10% the total value of all plants, including war plants, scheduled to be removed as reparations.



DISMANTLED MACHINE TOOLS at the Krupp plant in Essen, Ger., being readied for shipment to Yugoslavia as reparations in Feb. 1949

The policy of taking reparations from Germany continued to be attacked, both in Germany and elsewhere, including the U.S. congress. German protests ranged from press propaganda to strikes by workers and official opposition. Soon after the inauguration of the Federal Republic of Germany, the chancellor, Konrad Adenauer, began pressing Allied representatives for further concessions. At their meeting in Paris on Nov. 9 and 10, Dean G. Acheson and Ernest Bevin and Robert Schuman agreed to authorize their respective high commissioners in Germany to discuss the subject of dismantling with Adenauer with a view to final settlement of the problem. The agreement reached as a result of these discussions was initialed at Bonn, Germany, on Nov. 22 and provided for the removal from the reparations list of 11 synthetic oil and rubber plants, 7 steel plants and the cessation of all dismantling in western Berlin and, with certain exceptions, at the I. G. Farben plant at Ludwigshafen-Oppau.

It was reported in September that the U.S., France and the United Kingdom had agreed not to make any further deliveries of industrial plant to the U.S.S.R. as reparations, and on Dec. 3 the 19 members of the Inter-Allied Reparation agency were reported to have decided to divide among themselves the German industrial equipment stored in western Germany which had originally been destined for the U.S.S.R. under the Potsdam agreement.

Austria.—At its meeting in Paris from May 23 to June 20, the Council of Foreign Ministers agreed that reparations should not be exacted from Austria, thereby rejecting Yugoslavia's claims. It was stipulated, however, that the U.S.S.R. should receive from Austria the sum of $150,000,000 over a period of six years, with the additional proviso that, although there should be relinquished to Austria all property, rights and interests claimed as German assets or war booty, the U.S.S.R. should receive outright all the assets of the Danube Shipping company in Bulgaria, Hungary, Rumania and eastern Austria as well as the possession of 60% of Austria's oil properties for a period of 30 yr.

By the end of 1949 the deputies of the foreign ministers had not made any progress in agreeing upon the incorporation in a draft treaty of the principles thus enunciated.

Japan.—On May 12 the Far Eastern commission was advised by Maj. Gen. Frank R. McCoy of the decision of the U.S. government to terminate the Advance Transfer program, to take no further unilateral action to make possible additional reparations removals from Japan and to submit to the commission new policy proposals which would have the effect, if adopted, of precluding further industrial reparations removals from Japan during the occupation. General McCoy's statement emphasized that (1) the burden of further reparations removals from Japan could detract seriously from the occupation objective of stabilizing the Japanese economy and permitting it to move toward self-support; (2) the failure of the commission to agree upon a reparations-shares schedule made it impossible to implement existing commission decisions regarding reparations; and (3) Japan had already paid substantial reparations through expropriation of its former overseas assets and, in smaller degree, under the Advance Transfer program.

The U.S. decision was translated into a U.S. joint chiefs of staff directive for implementation by Gen. Douglas MacArthur. It provided that "items already processed" under the Advance Transfer program "will be made available for removal" and was interpreted to include reparations already packaged and in the process of being packaged as well as items allocated but not yet packaged.

Actual deliveries under the Advance Transfer program from the date of its initiation to Nov. 30 were as follows (in thousands of yen, 1939 values):

Claimant	Segment 1*	Segment 2*	Segment 3	Total
China	51,492	682	6,254	58,428
Netherlands.	11,557	226	4,051	15,834
Philippines	18,527	218	2,242	20,987
United Kingdom	9,723	197	9,715	19,635
Total.	91,299	1,323	22,262	114,884

*Deliveries completed and account closed.

Total allocations from segment 3, the only segment from which deliveries were still to be made at the end of the year, were 63,256.641 yen (including deliveries already made as indicated in the table above). Allocations by country were as follows: China, 27,848,082 yen; Netherlands, 6,992,816 yen; Philippines, 13,222,869 yen; United Kingdom, 15,192,874 yen. Packaging was virtually completed by Dec. 15.

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Representatives, House of: *see* CONGRESS, UNITED STATES; ELECTIONS.

Republican Party. In 1949 the Republican party, out of power at Washington, D.C., for 16 years, became a divided and weakened organization in search of a popular leader and a popular issue.

Intraparty bickering began as soon as the national committee held its annual meeting at Omaha, Neb., in January. Committeemen identified with the Taft-Stassen forces demanded the resignation of National Chairman Hugh D. Scott, Jr., of Pennsylvania, who had been selected for the post by Gov. Thomas E. Dewey of New York after his nomination as the 1948 presidential candidate. The opposition argued that Dewey and Scott had been too sympathetic to President Truman's "fair deal" program in the 1948 contest, and that they no longer represented or reflected major party sentiment.

"CONFUSED TRAVELER," a cartoon by Justus printed in the *Minneapolis Star* in 1949

When Scott refused to quit while under fire, National Committeeman Jacob France of Maryland offered a resolution proposing that the national chairmanship be declared vacant in the "best interests" of the party, and that a new chairman be chosen. The motion was tabled by a 54–50 vote. Principal speaker in favour of the motion was Rep. Clarence J. Brown of Ohio, who had been Sen. Robert A. Taft's preconvention manager in 1948.

Scott submitted his resignation at a special meeting of the national committee at Washington in August. After a sharp skirmish between eastern and western factions, National Committeeman Guy George Gabrielson of New Jersey was elected over National Committeeman Axel J. Beck of South Dakota by a 52–48 vote, with 2 ballots for A. T. Howard of Nebraska.

Gabrielson, a Manhattan lawyer, had been a Dewey supporter at the 1948 convention, but he immediately disassociated himself from any candidate or faction. He also placated the anti-Dewey group by declaring that he did not believe in a "me, too" policy.

Another important resignation served to illustrate the intraparty differences. James S. Kemper, Chicago insurance executive, quit as party treasurer because he disagreed with prominent Republican congressmen's support of the administration's foreign policy. He opposed especially loans and grants to the British labour government, which he described as "the younger sister of Russian Communism." Declaring that many important contributors were refusing to give money to the party because of its "me, too" attitude, as reflected in the Dewey and Wendell L. Willkie campaigns and Republicans' congressional voting, Kemper revealed that there was only $90,000 in the special reserve fund. On Dec. 31, 1949, the deficit in the everyday, operating treasury, as distinct from the reserve, was $420,000.

Kemper was succeeded by R. Douglas Stuart, Chicago food nanufacturer.

Contributions picked up in the year's last month. The inrease was attributed to the tentative decision of influential ational committee members and G.O.P. legislators to scrap the me, too" policy, except possibly in foreign affairs, and to the nnouncement of Governor Dewey that he would not be a andidate for the 1952 presidential nomination.

In November, acting on an authorization from the August neeting of the national committee, Chairman Gabrielson ounded the sentiment of Republican officeholders and organiation members on issuing a formal statement of principles. Ie asked: "Should there be a restatement of party principles at his time? If so, what should the restatement contain?"

Election results in 1949 had an anti-Republican flavor. The ontest which attracted most attention was the senatorial race n New York, where former Gov. Herbert H. Lehman opposed ohn Foster Dulles, who had been appointed by Governor Dewey to the seat made vacant by the resignation of Robert F. Wagner. Dulles made an all-out campaign against "statism," is description of the Truman "fair deal" philosophy. President Truman threw all his influence behind Lehman, who won by a lurality of 196,293 in a total vote of more than 5,000,000.

The Democrats also won mayoralty contests in such key ities as Boston, Mass., New York, Pittsburgh, Pa., Cleveland, O., and Louisville, Ky. In New York city the Republicans lected only 1 man to the new 25-man city council. In Philalelphia, Pa., the Democrats won four municipal offices which hey had never held in modern political history.

There were five special congressional elections to fill vacanies in 1949—three in New York, one in Pennsylvania and one n California. The Democrats won all except that in Pennsylania, where the G.O.P. picked up a seat. But that gain was ffset by a loss in California, where a Democrat won the place ormerly held by a pro-"fair deal" Republican.

The Republicans' only major victory was the re-election of Gov. Alfred E. Driscoll of New Jersey, who defeated former Rep. Elmer H. Wene by 80,070. Driscoll might have lost if it ad not been for a factional revolt against Frank Hague, veteran Democratic leader of Hudson county. Whereas Hudson ad usually given a plurality ranging from 70,000 to 100,000 o a Democratic candidate, Wene carried it by only 1,550.

So discouraging were the 1949 election results that Sen. John W. Bricker of Ohio, the party's vice-presidential nominee in 944, urged that the Republicans and conservative Southern Democrats, who frequently join in voting against administraion proposals, formalize their legislative alliance by merging nto a new political party. His suggestion was received coldly y the proposed participants in the coalition.

As the year closed, the Republicans were discussing possible residential nominees for 1952. Despite disclaimers that he ntertained any political ambitions, Gen. Dwight D. Eisenower's speeches attacking the "welfare-state" philosophy led to requent mention of him in the press. Senator Taft of Ohio ontinued to figure in all speculation. So did Harold E. Stassen, ormer governor of Minnesota and president of the University f Pennsylvania, Philadelphia, and Gov. Earl Warren of Caliornia, the 1948 vice-presidential nominee.

(*See* also ELECTIONS; UNITED STATES.)

(R. TU.)

esearch Libraries, Association of: *see* SOCIETIES AND SSOCIATIONS.

esins: *see* PLASTICS INDUSTRY.

etail Sales: *see* BUSINESS REVIEW.

éunion: *see* FRENCH UNION.

Reuther, Walter Philip (1907–), U.S. labour leader, was born Sept. 1 in Wheeling, W.Va. He worked in steel and auto plants, and in 1933, with his brother Victor, embarked on a tour of 11 countries of Europe and Asia, working in factories and studying labour movements. In 1936 he was elected to the international executive board of the United Automobile Workers, which was affiliated with the Congress of Industrial Organizations. In 1942 he became vice-president of the U.A.W. and in 1946 president. On April 20, 1948, unidentified assailants seriously wounded him with a shotgun blast; 13 months later, his brother was similarly attacked.

In Jan. 1949, he announced a fourth round of postwar wage demands, this time concentrating on securing pension concessions from the automobile manufacturers. He signed an agreement incorporating pension details with the Ford Motor company in September, and announced that the Chrysler Motor company would be the next to receive pension demands. On Dec. 20, 1949, an attempt to blow up the U.A.W. headquarters with dynamite failed because the fuses were improperly taped, and Reuther said this was a new incident in a "campaign of terror . . . waged by anti-labour, un-American elements."

Rheumatism: *see* ARTHRITIS.

Rhode Island. A north Atlantic state of the United States, in New England; one of the 13 original states; popularly known as "Little Rhody." Area, 1,214 sq.mi. (smallest of the United States), including 156 sq.mi. of water; pop. (1940) 713,346. The urban population was 653,383 (91.6%). On July 1, 1949, the bureau of the census estimated the population of the state at 743,000. Capital, Providence (253,504).

Other cities include Pawtucket (75,797); Woonsocket (49,303); Cranston (47,085); Newport (30,532); Warwick (28,757); Central Falls (25,248).

History.—At the regular 1949 session of the legislature, leading measures passed included the following: a general appropriations act for support of the government for the fiscal year ending June 30, 1950, to the amount of $36,908,641.18; an act making an appropriation of $1,000,000 for construction of highways under the federal Hayden-Cartwright act; an act requiring public utilities to file schedules showing rates and charges with the public utility administrator; an act requiring a fire alarm box to be installed in every theatre and a fireman to be stationed there; an act giving approval to a compact with other New England states for creation of a New England development authority; an act authorizing the governor to enter into reciprocal agreements with other states in matters affecting the interstate movement of transportation by motor vehicle and creating a reciprocity board and defining its duties; an act cited as the uniform divorce recognition act, concerning the recognition of a divorce obtained in another jurisdiction; an act making desertion by husband or father going into another state an extraditable offense; an act to prohibit discriminatory employment practices and policies based upon race or colour, religion or country of ancestral origin and to create a commission for fair employment practices, and defining its functions, powers and duties; an act increasing cash sickness payments from a maximum of $18 weekly to $25 weekly and the maximum duration of benefit periods from 20 to 26 weeks; second passage of the following proposed constitutional amendments: permanent registration of voters; raising legislator's pay from $300 to $1,500 annually with extra pay for leaders; permitting the state to borrow in excess of $50,000 on short term tax anticipation notes and enabling veterans to vote in financial town meetings even if their $1,000 property tax exemption leaves them with no tax to pay; first passage of the following constitutional amendments: abolishment of the poll tax; life tenure for supreme and superior court judges with retirement mandatory at age 70; extension of the period of registration for voting from June 30 to Sept. 30.

The chief executive officers of the state elected in Nov. 1948 for 1949–50 were John O. Pastore, governor; John S. McKiernan, lieutenant governor; Armand H. Cote, secretary of state; William E. Powers, attorney general; Raymond H. Hawksley, general treasurer. Edmund W. Flynn was chief justice of the supreme court.

Education.—During 1948–49 there were in the public elementary schools 60,678 pupils and 2,063 teachers; in junior high schools 16,039 pupils and 835 teachers; in senior high schools (three years) 13,243 pupils and 702 teachers; in senior high schools (four years and vocational) 4,590 pupils and 230 teachers. Pupils attending private schools were: elementary 26,209; junior high 4,220; senior high (three years) 1,017; senior high (four years) 5,932. Total number of teachers in private day schools was 1,187. Current expenditures for day schools were $18,452,751.88 and for evening schools $43,703.14. The director of education in 1949 was Michael F. Walsh.

Social Insurance and Assistance, Public Welfare and Related Programs.—The total number of persons receiving public assistance in all categories (excluding incapacitated fathers) in Nov. 1949 was 39,174. The total amounts paid out during the year Dec. 1, 1948, to Nov. 30, 1949, were as follows: general public assistance $3,564,310; soldiers' welfare $257,807; old-age assistance $5,181,689; aid to dependent children $3,306,693; aid to the blind $94,657. In unemployment compensation, the net amount of benefit payments during 1949 was $31,379,129.50 to 133,290 different individuals. The amount paid into the fund during 1949 including interest was $9,136,055.05. There were 738 inmates in corrective institutions on Nov. 30, 1949, and 5,136 patients in charitable institutions and institutions for defectives, the number in the latter being 4,017.

Communications.—The total mileage for highways on Dec. 31, 1949 (excluding city roads and streets under the control of the seven cities) was 2,622 mi. of which total 836 mi. were state roads built and maintained by the state into and through the cities. At the close of the year 1948, railroads were operating 184.79 mi. of main track in the state. On Dec. 31, 1949, motorbuses operated on 200.92 mi. of road, and trackless trolleys 82.37 mi. of road in the state. Water-borne commerce of the state for 1948 was 8,021,410 tons of which 875,436 tons were foreign commerce (imports 872,150 tons; exports 3,286 tons) and 6,871,388 tons were coastwise (receipts 6,176,825 tons; shipments 694,563 tons) and 274,586 tons were internal (receipts 111,995 tons; shipments 162,591 tons). On Dec. 31, 1949, there were two public-owned (state) airports, both class three, and seven private-owned airports or landing fields, all class one. Also there were two naval airports owned by the United States. In Dec. 1949, there were 227,905 telephones in service.

Banking and Finance.—There were 30 banking institutions in 1949. Resources of 22 banks under state supervision totalled $845,768,832.55, and of 8 banks under federal supervision $236,291,571.29. Savings deposits (exclusive of club accounts) in savings banks and trust companies (the 22 state banks) amounted to $544,203,730 on June 30, 1949. In addition, 6 loan and investment companies had resources of $4,630,724.71; 8 building and loan associations $83,194,876; 34 credit unions $15,010,102.32.

At the close of the fiscal year, June 30, 1949, total state receipts were $45,626,365.22; expenditures and encumbrances $43,201,046.94; surplus from operation $865,756.34. The state gross debt was $42,857,000, net debt $38,149,932.16.

Agriculture.—The total acreage of principal crops harvested was 51,000 in 1949. Cash income from crops in 1948 was $7,006,000; from livestock and livestock products $17,399,000; from government payments $92,000; total gross farm income $24,497,000. The value of livestock Jan. 1, 1949, was $8,177,000.

Table I.—*Leading Agricultural Products of Rhode Island*

Crop	1949	1948	Average, 1938-47
Corn, all, bu.	266,000	259,000	325,000
Hay (tame), tons	50,000	53,000	49,000
Alfalfa, tons	2,000	2,000	2,000
Potatoes, bu.	1,160,000	1,462,000	1,148,000
Oats, bu.	30,000	33,000	31,000
Apples (commercial), bu.	279,000	143,000	218,000
Peaches, bu.	15,000	14,000	15,000

On Jan. 1, 1949, the livestock population of the state included: 1,000 horses and colts; 22,000 milk cows two years old and older; 6,000 other cattle; 10,000 hogs; 2,000 sheep and lambs; 549,000 chickens; 5,000 turkeys; and 1,000 colonies of bees. Livestock products marketed in 1948 included: 132,000,000 lb. of milk valued at $8,671,000; 797,000 chickens, $2,097,000; 31,000 turkeys, $350,000; 7,250,000 doz. eggs, $4,502,000; and 21,000 lb. of honey, $5,000.

Manufacturing.—Employment in Dec. 1949 totalled 116,279 production wage earners and 18,860 nonproduction workers (salaried personnel) and the weekly pay roll was $5,845,742 for all manufacturing industries in Rhode Island according to the state department of labour. Wage earners were distributed among manufacturing industries as follows: textiles 61,128 (cotton 15,388; rayon-silk 5,162; woollen-worsted 26,003; finishing 10,845; miscellaneous textiles 3,730); jewellery-silverware 18,402; metals and machinery 25,490 (primary 5,163; fabricated 6,246; machinery 8,278; electrical machinery 5,803); rubber products 6,569; miscellaneous 16,414. The number of establishments employing five or more workers was 3,744 in Oct. 1949, and the number of persons employed was 200,731.

Mineral Production.—The value of mineral production in Rhode Island is small, exceeding only that of Delaware and the District of Columbia. Principal products in order of value are stone, sand and gravel and graphite. Value in 1947 was $785,000, in 1946 $561,000, in 1945 $508,000 and in 1944 $612,000. The values of products were stone $274,130 in 1946, $219,263 in 1945, $213,351 in 1944, and sand and gravel $8,486 in 1946, $221,530 in 1945, and $287,112 in 1944. Quantity production of stone was 4,860 tons in 1946, 11,280 tons in 1945 and 19,790 tons in 1944; sand and gravel 41,659 tons in 1946, 317,300 tons in 1945 and 352,905 tons in 1944. (M. C. Ml.)

Rhodesia, Northern.

Northern Rhodesia is a British protectorate on the plateau of central Africa. Area: 290,320 sq.mi. Pop. (1948 est.): 1,720,000. Chief towns: Lusaka (cap.), Livingstone and Ndola. Governor in 1949: Sir Gilbert McCall Rennie.

History.—In Feb. 1949 unofficial European members of both the Northern Rhodesian and Nyasaland legislative councils took part in a conference, attended also by the prime minister and other members of the Southern Rhodesian government, at which a unanimous resolution was passed in favour of federation of the three territories and the creation of a federal parliament, the federal government to have wide powers.

Unofficial members of the legislative council having raised the question of taxing the mineral royalties of the British South Africa company, a meeting was called in London between the secretary of state for the colonies, the governor, and representatives of the elected members of the legislative council and of the company; it was there agreed, *inter alia,* that, subject to certain guarantees in the meantime, the company should transfer its mineral rights to the government of Northern Rhodesia after 37 years.

A speech, made by the secretary of state for the colonies at Salisbury, Southern Rhodesia, during a tour of central Africa in the spring, was strongly criticized by the European element in Northern Rhodesia. In the course of the speech the secretary of state stressed the British government's responsibilities to the Africans in Northern Rhodesia and defined the scope of white settlement and European development. Later he found it necessary to enlarge on his statement and define his meaning more explicitly.

Under the auspices of the Beit trustees one of London's emergency wartime bridges was transported and re-erected over the Kafue river, thus linking more effectively two sections of the Great North road in southern Africa. (*See* also RHODESIA, SOUTHERN.)

Finance and Trade.—Currency: Southern Rhodesian pound at par with sterling. Budget (1948): revenue £6,715,517; expenditure £6,208,455. Foreign trade (1948): imports £16,438,126; exports £28,650,783. Principal exports: copper (blister and electrolytic), zinc and lead.

(Jo. A. Hn.)

Rhodesia, Southern.

A self-governing African colony in the Commonwealth of Nations, with imperial government supervision over native rights. Area: 150,333 sq.mi. Pop. (Aug. 31, 1949, est.): 2,021,900 (European 115,500; African 1,898,000; Asiatic 3,400; mixed 5,000). Chief towns (1949 est., Europeans only): Salisbury (cap., 32,000); Bulawayo (28,000); Umtali (4,200); Gwelo (4,000). Languages: English, Afrikaans and native tribal languages. Governor in 1949: Major General Sir John Noble Kennedy; prime minister: Sir Godfrey Huggins.

History.—Politically, 1949 was an uneventful year. The United party lost the only by-election held in 1949, being defeated by the Southern Rhodesia Labour party candidate in Bulawayo district. The prime minister headed a delegation to a meeting with nonofficial representatives of Northern Rhodesia and Nyasaland at Victoria Falls under the chairmanship of Sir Miles Thomas to discuss federation of the three territories. A resolution in favour of "a constitution which will create a federated parliament with such powers as are surrendered to it and which will not affect the other powers of the governments of member states" was passed. The constitution would be modelled on that of Australia. Commenting on the proposal, the secretary of state for the colonies said in London that the British government had a special responsibility for Africans and pointed out that no African took part in the conference. Philip J. Noel-Baker, secretary for commonwealth relations, after consultations in December with T. H. W. Beadle, Rhodesian minister of internal affairs, recommended further investigations of the problem between the parties concerned.

The minister of finance, E. C. F. Whitehead, headed a delegation to London to present to the British government the colony's four-year plan for loan expenditure and to ascertain whether British industry could supply capital goods for the production targets.

Whitehead also attended the conference of commonwealth finance ministers in London.

A royal commission on town-planning and a special research department for conservation works were established. Price control was removed from a wide range of commodities during the latter part of the year and permit control of building ceased except in Salisbury and Bulawayo.

Budget changes included a tax on undistributed profits, an increased duty on imported spirits, a higher surcharge on cigarettes, reintroduction of the *2d.* rate for postage within the colony, doubling the rate of transfer duty on property valued at more than £20,000, an increase of *3d.* per gallon on gasoline, a tax on nonindustrial native labourers and an increase from 20% to 30% in entertainment tax. A 20% export tax was imposed on Virginia flue-cured tobacco. This caused considerable controversy and was reduced to 15%. Later it was withdrawn in favour of a five-year loan of 15% of the proceeds of tobacco sales.

A new peacetime establishment for the territorial force was approved, comprising armoured cars, artillery, engineers, signals, two battalions of infantry and a medical corps. The annual defense force camp was attended by units from Northern Rhodesia, Nyasaland and Kenya.

The government assumed control of all base mineral exports. The gold subsidy was modified to the advantage of low grade workings and was withdrawn when the pound was devalued. A bill was introduced to terminate within six years the mineral concessions granted to the British South Africa company without compensation; this was amended to include compensation after six years. An agreement was completed with the Wankie Colliery company for the company to retain an area containing 350,000,000 tons of extractable coal for 100 years. The estimated production in 1949 was more than 2,000,000 tons and plans were to raise it to 3,500,000 tons a year. (*See* also RHODESIA, NORTHERN.)

Education.—European (1949): governmental primary schools 69, pupils 12,377, teachers 447; high schools 11, pupils 4,531, teachers 265; aided private schools 21, pupils 3,638; aided farm schools 13, pupils 195. Asiatic and mixed (1949): government primary schools 12, pupils 1,774, teachers 60; aided schools 4, pupils 886. Native (1948): primary schools 1,994, pupils 204,172, teachers 5,327 African and 204 European.

Finance and Banking.—Budget: (1948–49 actual) revenue £13,575,000, expenditure £13,546,000; (1949–50 est.) revenue £15,059,000, expenditure £16,480,962. National debt (March 1949) £75,380,359. Currency circulation (March 1949) £8,402,000 (including Northern Rhodesia and Nyasaland).

Trade and Communications.—(Jan.-July 1949) Imports £28,992,000, exports £15,578,000, re-exports £2,548,000. (1948) Main roads: *c.* 15,500 mi., including *c.* 2,500 mi. with tar-macadam strips. Railways 1,352 mi.; passenger traffic 2,829,913; freight traffic 5,096,986 long tons.

Agriculture.—Tobacco (Virginia, 1948–49) 81,714,330 lb. Livestock (1948): cattle 2,821,000; sheep 301,000; goats 555,000; pigs 103,000.

Industry.—Fuel and power: coal (in long tons) (1948) 1,869,000; electricity (1948–49) 173,000,000 units sold. Raw minerals: gold (1948) 514,440 oz,; asbestos (1948) 69,000 long tons; chrome (1948) 254,000 long tons. (G. R. MN.)

Rice. The U.S. rice crop of 1949 was the fourth consecutive higher-record crop, reaching 89,141,000 bu., 42% larger than the 1938–47 average of 62,944,000 bu. and 5% larger than the 85,056,000 bu. of 1948. The acreage, in contrast with a government-announced goal of 1,600,000 was at a record level of 1,821,000. The yield of 49 bu. per acre exceeded that of 47.8 for 1948 and 46.6 bu. as the average for the previous decade. Louisiana continued as the leading producer (24,559,000 bu.), and California (21,462,000 bu.) moved into third place with a crop 6,000,000 bu. larger than in 1948.

The price received by farmers for rice during 1949 was much lower than the peak price of $3.12 per bushel received in Feb. 1948, and declined rather sharply during the year from $2.47 per bushel in January to a low of $1.70 in September, after which there was modest recovery. The secretary of agriculture ordered a 13.7% cut in the acreage to be planted in 1950, a goal of 1,593,000 to produce 74,293,000 bu.

World rice production in 1948–49 of 144,200,000 metric tons (paddy) was an increase over the 142,500,000 tons of 1947–48, but 2% below the prewar average, although acreage was 3% above prewar. Rice production in Japan, Malaya and the Philippines exceeded the prewar level, and there was substantial recovery in south Korea and Indonesia. Indian acreage was increased about 10% compared with prewar, without, however, reaching the prewar production level. World trade in rice reached 3,500,000 tons, still 60% below the prewar average, mainly affecting the imports of Japan and India.

Preliminary indications were that the 1949–50 rice crop would be 2% to 4% less than in 1948–49, primarily because of the less favourable weather conditions in the main producing areas of Asia. (*See* also FOOD SUPPLY OF THE WORLD.) (J. K. R.)

Rio De Oro: *see* SPANISH COLONIAL EMPIRE.
Rio Muni: *see* SPANISH COLONIAL EMPIRE.

Rivers and Harbours. In 1949, construction was executed on 81 regular river and harbour projects by the U.S. army corps of engineers; of this number, 23 were completed. Maintenance was performed on a total of 336 projects, including the extensive intercoastal waterways and Mississippi river system, the connecting channels on the Great Lakes, the 490 navigation locks and dams, and 270 harbours, and also channels and canals of the Ohio river system, the Upper Mississippi river, the Illinois waterway, the hydroelectric generating plants on the Missouri river at Fort Peck, Mont., and the Columbia river at Bonneville, Ore. During the fiscal year which ended June 30, 1949, $178,301,100 was expended for new work and maintenance of river and navigation projects and inland and coastal harbours.

The Rivers and Harbors act of 1949 provided $197,985,690 for maintenance and improvement of the nation's rivers and harbours. Of this total $114,145,690 was designated for new construction work on 92 projects in 34 states, the District of Columbia and Alaska. Maintenance, operation and care were allotted $77,000,000; advance planning, $2,000,000; preliminary examinations and surveys, $1,200,000; and miscellaneous items, $5,640,000. Important river and harbour projects allocated $1,500,000 or more for construction were: McNary Lick and dam, Columbia river, Oregon and Washington, $35,000,000; Missouri river, Kansas City, Mo., to Sioux City, Ia., $2,500,000; Mississippi river, between Ohio and Missouri rivers, $9,750,000; Missouri river, mouth to Kansas City, $2,250,000; Gulf Intracoastal waterway, New Orleans district, $2,500,000; St. Marys river, Michigan, $2,700,000; Cleveland harbour, Ohio, $1,500,000; Missouri river at Fort Peck, Mont., $2,500,000; Monongahela river, Pennsylvania, $3,500,000; Jim Wood-

GERMAN PORT OF BREMEN which profited considerably in 1949 by a decision of the U.S. military government to use it as a port of entry for overseas shipments

ruff dam, Florida, $7,500,000; Chief Joseph dam on Columbia river, Washington, $5,000,000.

Advance planning was executed during 1949 on 16 river and harbour projects in ten states. The more important of these planning projects were the Lower Monumental Lock and dam, Snake river, Washington; Arkansas river and tributaries, Arkansas and Oklahoma; Alabama-Coosa river, Alabama and Georgia; Tennessee-Tombigbee waterway, Alabama and Mississippi; McGee Bend dam, Angelina river, Texas; and Dover Lock and dam, Kentucky.

At the end of 1949, there were 1,036 authorized investigations in advance stages of completion. Included in the studies were the Trinity river, Texas; the coast of California, to determine the advisability of providing harbours of refuge for small craft; major coastal harbours to determine the advisability of increasing harbour depths to accommodate the new types of deep-draft tankers and cargo ships; beach erosion control studies of the Connecticut shore and of the Illinois shore of Lake Michigan; and a comprehensive survey of the water resources of Alaska for navigation, power development, flood control and related purposes. (G. Hb.)

Canada.—Both public and private pressure increased for action on the long-discussed St. Lawrence river seaway, particularly after discovery of the Quebec-Labrador iron ore deposits in 1948. The Canadian government made representations to the United States government to complete the necessary legislation to fulfill the 1941 agreement.

Awareness of the important role of Canada's rivers and harbours was reflected in the 1949–50 parliamentary vote of more than $31,000,000 for construction, repairs and improvements of rivers and harbours. In addition, $500,000 was voted to provide remedial works where navigation was endangered, $4,285,000 for dredging, and $5,000,000 for an icebreaker for the St. Lawrence.

Parliament voted the National Harbours board more than $7,000,000 for 1949–50 reconstruction and capital expenditures, compared with about $6,000,000 for 1948–49.

Latest complete statistics on harbour activities were for 1948 (with 1947 figures in parentheses): 106,279 arrivals (103,307) unloading 36,683,000 tons of cargo (32,740,358), and 106,511 departures (101,454) loading 20,029,190 tons (21,246,012).

During 1949, the National Harbours board engaged in large constructional works at Montreal, Halifax and St. John, New Brunswick. At Montreal, the Jacques Cartier pier was under reconstruction. Precast concrete cylinders, 70 ft. long, were being used to carry a concrete deck. (C. Cy.; X.)

Great Britain.—In 1949 the first year's working of the nationalized dock undertakings in Great Britain showed a deficit in operation of docks, harbours and wharves vested in the British Transport commission. The undertakings showed losses in all but two groups, although gross receipts were 25% above those for 1947. The total deficit for 1948 was £1,329,484. It was agreed that transfers to the commission should be effected by stages beginning with the south Wales docks and those at King's Lynn, Norfolk. The docks at Hull, Yorkshire, Grimsby and Immingham, Lincolnshire, were transferred on Jan. 1, 1949.

The final report of the working party on the turn-over in shipping was given special attention and measures were taken to carry out its recommendations. A joint consultative council was established. Its meetings provided opportunities for the exchange of views on the whole of inland transport. Wages questions, conditions of service or statutory committee matters were excluded. The council comprised members of the commission, the executive and trade union representatives.

The National Dock Labour board published its first annual report in 1949, covering the period June 28, 1947, when the minister of labour's scheme commenced, to Jan. 3, 1948. Port registers showed an average of 74,585 men, 91.7% available, for the half-year to Jan. 3, 1948. Certain local boards faced labour shortages and 3,000 men were recruited. Use of the scheme's provisions was urged by transfers from other ports.

At Liverpool, the radar station was used by nearly 250 vessels entering or leaving the port. Its value during foggy weather was proved; continuous position information was supplied to vessels. The war-damaged Gladstone-Hornby lock was repaired and put in commission in March. Princess Elizabeth opened the new entrance to Waterloo dock.

The Port of London authority celebrated its 40th birthday. An unofficial strike of dockers, from early May to July 11, cost the country a loss of 2,300 operating days and held more than 100 ships idle. Bow Creek wharf, rebuilt after bomb damage, reopened as one of the two main Thames iron and steel discharging points. Designs for a false quay 1,320 ft. long, 29 ft. deep alongside north quay, West India dock, were prepared and two diesel-driven floating grain elevators were ordered.

Work on the Manchester Ship Canal company's £4,000,000 new oil dock for 30,000 ton tankers began at Eastham, near the entrance to the ship canal. The dock entrance lock was planned to be 800 ft. long and 100 ft. wide.

At Southampton, four or five berths to deal with about 350 tankers annually were planned to accommodate the largest tankers foreseen. Plans were prepared for a new two-story terminal building and a new "berth 44" for passengers for the "Queen Mary" and "Queen Elizabeth" was begun.

Australia.—Legislation was adopted reconstituting the Stevedoring Industry commission which controlled port waterfront operations. The reclamation for the new Appleton dock, west of the Yarra, proceeded.

British East Africa.—Dar es Salaam, Tanganyika, progressed toward becoming a major port capable of accommodating 600-ft. ships of 30-ft. draft. Improvements to the entrance channel, increase of the lighter fleet, additional deep-water berths, cranes and rolling stock should, by 1951–52, enable the port to handle 850,000 tons of cargo annually, nearly twice the total for 1948. Construction proceeded on Mtwara port (former Mikindani).

British West Africa.—Work was commenced on the extension and development of the harbour at Takoradi, Gold Coast. The new work was expected to cost £2,250,000 and was planned to be completed by 1953.

Ceylon.—Work at Colombo port included the construction of an oil jetty and two alongside quay berths, enabling direct discharge to road transport.

France.—Works completed included repairs at Le Havre and reconstruction at Marseilles and Port du Bouc oil port (Marseilles).

India.—The ports at Bombay, Madras, Calcutta and Cochin were given development priority. French experts visited India and surveyed many ports and planned new shipyards. Kandla was being developed into a major port, capable of handling 3,000,000 tons annually. In Calcutta model experiments were conducted for the improvement of the river Hooghly.

Ireland.—Work began on Sligo's Irish-American Oil depot to store the oil demand for northwest Ireland and Donegal. The Dublin Port Works board began work on a scheme to provide additional berthage, shed accommodation and a graving dock.

Israel.—Constructional work proceeded at Haifa, and a £15,000,000 scheme was planned for Jaffa-Tel Aviv.

Netherlands.—A new industrial harbour of Maastricht was begun. The new inland port at Nijmegen, at the confluence of the new Maas-Waal canal with the Waal (Rhine), was taken into operation.

Pakistan.—The development of Chittagong into a major eastern port proceeded. The program provided for 14 additional berths.

Mozambique.—The Portuguese government took over control of the port of Beira and improvements proceeded. A port at Nacala, north of Mozambique, was under construction.

Singapore.—Rehabilitation and wharf dredging was completed and re-equipment proceeded.

Sweden.—The largest dry dock for use in the Baltic was towed in seven sections from Britain to Stockholm for Finnboda shipyard. (*See* also Aqueducts; Canals and Inland Waterways; Dams; Floods and Flood Control.)

(W. A. F.)

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Films of 1949.—*Ohio River—Lower Valley; Ohio River—Upper Valley* (Academy Films).

Roads and Highways.

Progress was made in highway improvement in many parts of the world in 1949. In a few countries steps toward planning and constructing adequate highway systems were of a notable character. In some the increase in size of program gave promise of still greater accomplishments to come. But, in the United Kingdom and countries of Europe there was little betterment of highway systems. In China, where highway systems had grown rapidly during the past decade, even during Japanese occupation, there was every indication that work had ceased and that roads were falling into a state of disrepair. Elsewhere, in countries having to import road machinery and certain materials, there was difficulty in obtaining them, except in small quantities, because of the state of world commerce.

United States.—Highway work progressed at a more rapid rate than in any year since the end of World War II. In the first ten months of 1949 state highway departments awarded contracts for 40,181 mi. of construction to cost more than $1,000,000,000. The figures include 17,145 mi. of federal and federal-aid construction. In the fiscal year ending June 30, 1949, 21,032 mi. of highway were completed in the program involving federal funds, at a cost of $762,913,000. The federal assistance amounted to $401,968,000.

It was estimated that highway-construction expenditures by all agencies in 1949 would amount to $1,705,000,000 and that $1,295,000,000 would be expended for maintenance.

Highways of all classes were improved, the greater part of the work being to modernize old, worn-out highways to make them suitable for modern traffic. In numerous cities expressways were built to permit the flow of traffic at speeds of 35 to 50 m.p.h. without interruption or conflicts of any kind. Cities where large projects were under way included New York, Pittsburgh, Washington, Atlanta, San Antonio, Houston, Dallas, Fort Worth, Detroit, Chicago, Oakland and Los Angeles. (*See* also Bridges.)

In June the bureau of public roads reported to congress that serious deficiencies existed in the national system of interstate highways. This system, which included 37,800 mi. of the most important highways of the country, carried 20% of the nation's traffic.

All but 1,900 mi. of the 31,831 mi. of the system in rural areas required improvement to bring these routes up to standards recommended for existing volumes of traffic. Of the 5,969 mi. of roads and streets in urban areas, all but 398 mi. required some degree of improvement. The cost of improvement was estimated at $11,000,000,000.

Canada.—Highway construction outside of cities was to be completed at a cost of $234,000,000. Interest was centred particularly on completion of the 4,300-mi. Trans-Canadian highway from Halifax to Vancouver. There were 1,700 mi. still to be constructed.

Construction of a $13,500,000 highway and railroad bridge over the Strait of Canso, which separates Cape Breton Island from the mainland of Nova Scotia, was assured by the Canadian government. A board of engineers reported that it is feasible to bridge the strait, which is 3,000 ft. wide, 200 ft. deep in places, and subject to strong tidal currents.

Mexico.—This country also was having its greatest road-building year. Completion of the Inter-American highway across the country to the Guatemalan border was scheduled for the end of the year and the important main highway from Mexico City to Juarez on the border opposite El Paso, Tex., was nearing completion. Work progressed on the biggest highway job in the country—the Pacific coast-Mexican highway—a 1,640-mi. route down the coast to Guadalajara, and then inland to Mexico City. Construction of arterial routes had progressed to the point that attention was being given to the need for 62,500 mi. of secondary roads.

Inter-American Highway.—The Inter-American highway extends from Laredo on the border between Mexico and the United States to Panama city, a distance of 3,200 mi. The highway was not suitable for travel beyond southern Mexico. There were three large unimproved gaps. One about 80 mi. long was in southern Mexico and western Guatemala. The Mexican portion was nearing completion and work was in progress in Guatemala but completion was not in immediate prospect. Provision had not been made for closing the other gaps, about 65 mi. in northern Costa Rica and about 150 mi. in southern Costa Rica and northern Panamá. Near the close of the year 87% of the highway was passable at all times, 4% was passable in dry weather only, and 9% was impassable in all seasons.

South America.—Good progress was made in several countries of South America. The section of the Pan-American highway along the west coast of the continent remained in substantially the same condition as in previous years, that is, passable by vehicles but not suitable for tourist travel. Much improvement of the road and provision of tourist facilities would have to be made before long-distance travel could be recommended. However, the highway was of great service for local travel and was used to some extent for travel between countries. Ecuador began construction of a 69-mi. highway to complete a branch from the Pan-American highway at Quito to the seaport Esmeraldas.

In Brazil the highway programs directed by the national and state governments gained momentum. The national road organization reported in July that 430 mi. had been completed in the preceding 12 months. The national highway fund for 1949 amounted to $275,000,000 and other funds available to the national organization brought the total to $360,000,000. Important sections of the national system of highways, which also form a part of the Pan-American Highway system, were under construction. Tunnels on the four-lane divided highway connecting São Paulo with Santos were to be completed before the end of the year. In northern Brazil a new highway from Natal to Recife reduced travel time from 11 to 6 hr. Between Natal and João Pessoa the old route, 185 mi. in length, was shortened by 58 mi.

Venezuela launched a much enlarged highway program. Plans called for the surfacing of 500 mi. of existing roads and the construction of 400 mi. of new roads. A major highway project was the long-planned road between Caracas and the main seaport and airport at La Guaira. A four-lane concrete highway to replace the old narrow mountain road and reduce the distance from 20 to 10 mi. was begun.

United Kingdom and Europe.—Progress toward creation of the kind of improvements needed to make possible adequate highway transportation was disappointing. Economic and political troubles permitted little more than maintaining the badly worn and obsolete highways unsuited to motor-vehicle use. There was almost no major construction of modern highways to carry large traffic volumes.

Plans for an international network of main highways for Europe were advanced materially under the guidance of the Economic Commission for Europe (E.C.E.) of the United Nations. At a meeting held in Geneva in March, 12 governments and the occupation authorities of the western zones of Germany reached final agreement on a network of traffic arteries designed to meet existing needs and anticipated traffic requirements for the next 10 to 15 years.

Routes from Helsinki to Marseilles, from Edinburgh to Rome, and Paris to Warsaw were among the many included. Standard designs for three categories of roads in the system were agreed upon. The participating governments began studies of the conditions upon which the construction of the road network could be undertaken and financed.

U.S.S.R.—Detailed reports on road conditions in the U.S.S.R. were not available. The government organ *Izvestia* reported that there were only 90,000 mi. of roads and that the road-building program was being accelerated. Lack of good highways was a serious problem. According to *Izvestia,* 138 road-building organizations were to be in operation in 1949. Each would be expected to build 30 mi. of surfaced roads and 60 mi. of improved dirt roads annually. This would result in the improvement of 12,420 mi. per year.

India.—The government of India found it necessary to cut back on its original plan to spend $90,000,000 on a national-highway system. In the fiscal year 1949–50 it planned to spend $5,400,000 for new projects and $6,400,000 for maintenance. The expenditure at the close of the fiscal year 1949–50 would be only about one-third of that originally planned.

There were gaps of 1,802 mi. and a number of unbridged rivers on the system. A program to be completed in the near future provided for closing of 917 mi. of these gaps and bridging of several streams. The need for highway transport was so great that negotiations were being conducted to permit motor vehicles to cross some of the larger streams on railroad bridges. Construction of a bridge on the route between Bombay and Calcutta that would cost about $3,000,000 was begun.

Turkey.—The outstanding example of progress toward a modern system of highways was found in Turkey. Studies were made of highway needs, a system was planned, laboratories and machine shops were established, training courses were begun for machine operators, inspectors and other workers and actual construction was started. In 1948 the Turkish government expended $13,000,000 for labour and materials and the program was enlarged in 1949. Assistance had been given by the United States as part of the Turkish Aid program by allocation of $5,000,000 and a loan of equal amount for purchase of machinery and equipment. A group of engineers assigned by the United States government assisted the Turkish government in the various phases of the work.

Republic of the Philippines.—The rehabilitation of war-damaged highways, financed by the government of the United States, progressed rapidly during the year. This work, authorized in 1946, resulted in the completion of 65 mi. of highways and more than a score of bridges by July 1949. At that time 72 projects were under construction and 23 were to be started soon.

(*See* also MOTOR TRANSPORTATION.)

FILMS OF 1949.—*Building a Highway* (Encyclopædia Britannica Films Inc.). (T. H. MACD.)

Rockefeller Foundation: *see* SOCIETIES AND ASSOCIATIONS.
Rockets: *see* JET PROPULSION; MUNITIONS OF WAR.
Roentgen Ray: *see* X-RAY AND RADIOLOGY.

Roman Catholic Church.

During 1949, the Sacred College of Cardinals was reduced to 54 by the deaths of Emmanuel Cardinal Suhard, archbishop of Paris and Francesco Cardinal Marmaggi, prefect of the Congregation of the Council. No new cardinals were created.

Two canonizations took place. On May 15, Blessed Jeanne de Lestonnac, foundress of the Daughters of the Blessed Virgin Mary, was enrolled in the ranks of the saints, and on June 12 Blessed Maria Guiseppa Rossello, foundress of the Daughters of Our Lady of Mercy, was solemnly canonized.

An encyclical was issued demanding internationalization of Jerusalem and all other sacred places, freedom of education and worship for religious institutions and freedom of access for Catholic pilgrims in the new state. Concern for human rights was expressed by Pope Pius XII in his statement to the International Congress of Humanistic Studies. He declared that when the Catholic Church fights to conquer or preserve her own freedom she also fights for the true freedom of basic human rights. In a speech addressed to James D. Zellerbach, head of the European Recovery program, the pope unreservedly endorsed the Marshall plan and paid tribute to the generosity of the American people.

RELIGIOUS PROCESSION in Budapest, Hung., where the observance of Roman Catholic practices became a symbol of resistance to communism in 1949

The Supreme Sacred Congregation of the Holy Office issued a decree to the effect that Catholics supporting the materialistic and anti-Christian doctrine of communism are apostates from the Catholic faith and, therefore, incur excommunication.

In May Pope Pius XII promulgated a bull announcing the Holy Year of 1950.

In Hungary, Cardinal Mindszenty was arrested in Dec. 1948 and charged with suspicion of treason. He was sentenced to life imprisonment after a confession of guilt believed to have been the result of drugs and torture.

Archbishop Beran was confined to his palace in Czechoslovakia by the Communists. All schools were taken over by the state, collections were banned in the churches, political tutors were appointed to all Roman Catholic theological seminaries, the clergy were made dependent upon the state, church marriages were declared illegal unless preceded by civil ceremonies. Pope Pius excommunicated all government officials responsible for creation of what the Vatican considered a spurious "Catholic Action" organization in Czechoslovakia.

Poland followed the other "iron curtain" countries with church restrictions. Printing establishments were closed, priests excommunicating Communists were made liable to capital punishment or long prison terms, and religious orders and associations were obliged to register and seek permission to continue their existence.

The National Catholic Educational association held its 46th annual convention in Philadelphia, Pa., in April. In March the National Catholic Conference on Family Life met for its 17th annual convention in San Francisco, Calif. The Catholic Press association at their Denver, Colo., convention reported that the total circulation of Catholic publications had increased 150% in 25 years—from 5,600,000 to 14,000,000. The Inter-American Conference of Catholic Social Action held its third annual meeting at Rio de Janeiro, Brazil, in August. The 35th annual meeting of the National Conference of Catholic Charities was held in Atlantic City, N.J.; the 27th convention of the National Catholic Rural Life conference in Columbus, O.; and the 67th annual meeting of the Knights of Columbus in Portland, Ore.

The bishops of the United States issued a statement, "The Christian Family," which emphasized four principles of family life—permanence, freedom, economic security and religion.

Concern for the suffering children in many lands was expressed by Pope Pius XII in his March 2 radio address to more than 2,000,000 students of Catholic schools in the United States and he requested contributions from them as a special Lenten sacrifice. Msgr. Thomas J. McMahon, national secretary of the Catholic Near East Welfare association of the United States, reported that Catholic organizations had and would continue to have 2,000 priests and sisters working in the field assisting refugees. They had given regular assistance to about 200,000 of the 500,000 refugees. Msgr. Edward E. Swanstrom, executive director of the American Catholic relief agency reported that War Relief Services, National Catholic Welfare conference, had distributed so far 290,000,000 lb. of relief supplies valued at $130,000,000.

The world population of Roman Catholics was 423,000,000. In the United States, Hawaii and Alaska, it was estimated at 26,718,343, an increase of 642,646 over 1948. The hierarchy ruled 23 archdioceses, 101 dioceses and 1 vicariate-apostolic (Alaska). There were 4 cardinals, 20 archbishops, 157 bishops and 36 abbots. Parishes totalled 15,905, and there were 42,334 priests, 7,302 brothers and 141,606 nuns.

Bishop Mariano S. Garriga, coadjutor of the diocese of Corpus Christie, Tex., assumed direction of the diocese March 15, on the resignation of Bishop Emmanuel B. Ledvina, who retired because of ill health. The Most Rev. Emmet M. Walsh, bishop of Charleston, S.C., was named coadjutor bishop of Youngstown, Ohio, diocese with right of succession to Bishop James A. McFadden. Msgr. John P. Phelan, vicar general, was elected to serve as administrator of the diocese of Springfield, Mass., until the installation of a new bishop to replace the Most Rev. Thomas Mary O'Leary, who died Oct. 10. The Most Rev. Edward A. Fitzgerald, former auxiliary to the archbishop of Dubuque, Iowa, was made bishop of Winona, Minn. The Most Rev. Leo Binz, formerly titular bishop of Pinara and coadjutor to the bishop of Winona, was named titular archbishop of Silyum and coadjutor with right of succession to Archbishop Henry P. Rohlman of Dubuque. Msgr. Francis E. Hyland, pastor of the Church of Our Lady of Lourdes, Philadelphia, Pa., was named titular bishop of Gomphi and auxiliary to Bishop Gerald P. O'Hara of Savannah-Atlanta, Ga. Msgr. James H. Griffiths, chancellor of the Military Ordinariate, comprising all Catholics in the armed forces of the United States, was named titular bishop of Gaza and auxiliary to Francis Cardinal Spellman in his capacity as military vicar. The Most Rev. Francis M. Kelly, formerly bishop of Winona, was named titular bishop of Nasai.

Among the awards conferred during the year were the Magnificat medal given by Mundelein college, Chicago, Ill., to Mrs. Mary Blake Finan, Chicago social worker; the Catholic Action medal was awarded to Bruce M. Mohler, National Catholic Welfare conference, Immigration Bureau director by St. Bonaventure college, St. Bonaventure, N.Y.; Irene Dunne, movie actress, was presented with the Laetare medal by the University of Notre Dame; Etienne Gilson of France received the Christian Culture medal from Assumption college, Windsor, Ont.; the James J. Hoey Interracial Justice awards were received by Dr. John J. O'Connor, Washington, D.C., educator and writer, and M. C. Clarke, Cleveland, O., insurance executive.

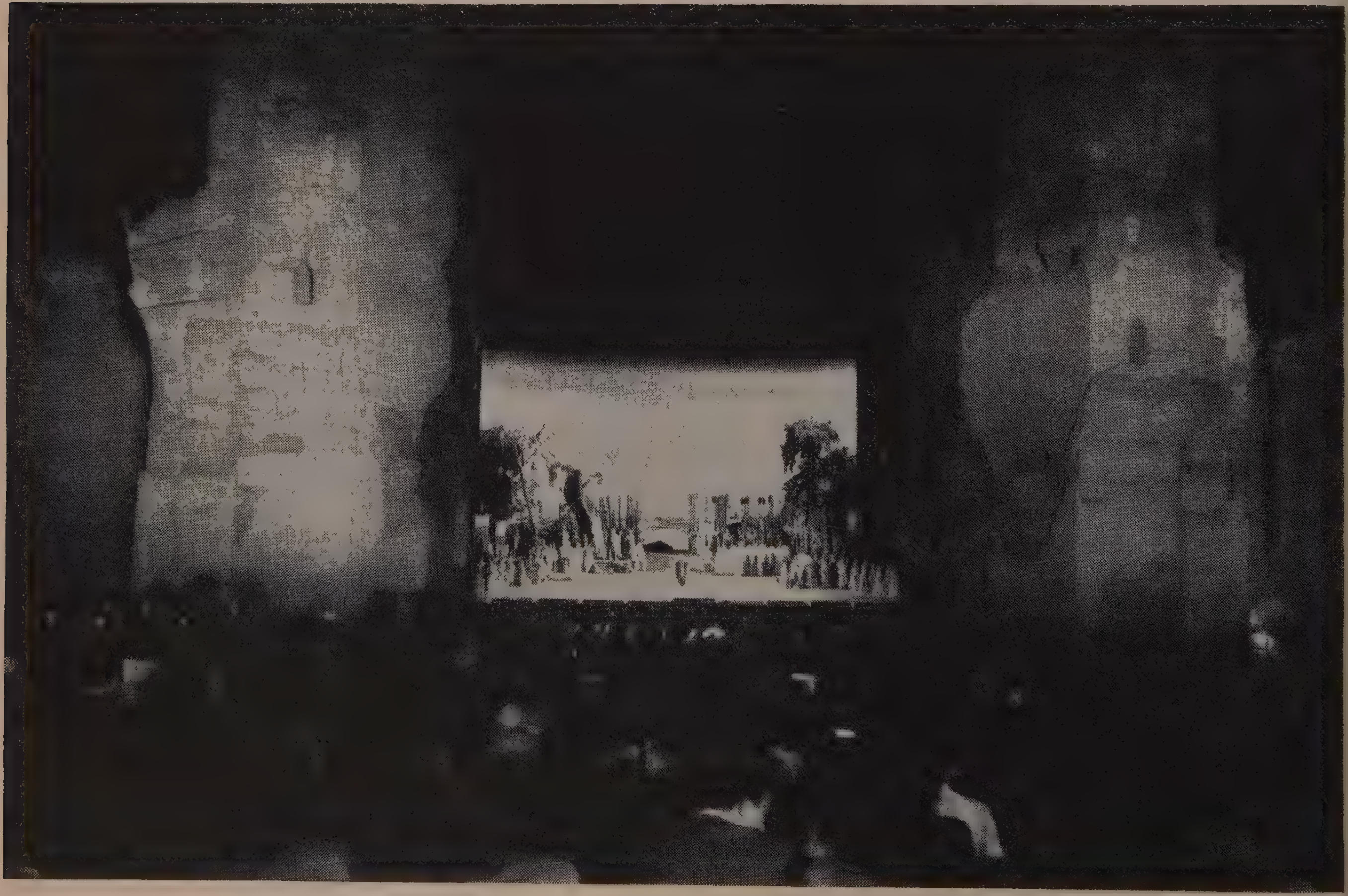
The Claver index, containing more than 35,000 reference cards on the subject of the Negro and the Catholic Church and of race relations, was installed at the Catholic Interracial centre at 20 Vesey St. in New York city. This unique collection was the life work of Father Arnold Garvy, S.J., of Chicago, and was being used by students and research workers from all over the country. The Catholic Interracial council of New York, N.Y., completed its eighth year of weekly interracial forums of leading speakers treating a wide variety of problems dealing with race relations. In addition to the 12 Catholic Interracial councils existing, 4 others were in process of formation during the year. (*See* also CHURCH MEMBERSHIP; RELIGIOUS EDUCATION; PIUS XII; SOCIETIES AND ASSOCIATIONS; VATICAN CITY STATE.) (J. LaF.)

Rome.

Capital and largest city of Italy. Pop.: (1936 census) 1,562,580, (July 1, 1948, est.) 1,613,660.

During 1949 traffic in Rome continued to multiply, especially the trolley buses, which were very smart and swift but as crowded as ever and up in price. The broken-down trolley cars of the immediately postwar period began to yield place to fine new ones but here, too, the overcrowding continued unabated. Most of all, motor bicycles increased, particularly the light "scooter type." The long drought brought a serious water shortage followed by an electricity famine, involving two days, and in the autumn three days, without current from 7 A.M. to 6 P.M.

OUTDOOR OPERA in Rome, Italy, where four operas were performed every week during July and August of 1949; it was Rome's greatest summer musical attraction and drew large audiences throughout the season



RINCETON UNIVERSITY CREW (far left) crossing the finish line 3 lengths ead of the Reading Rowing club (foreground) in the 14th heat for the ames challenge cup at Henley-on-Thames, Eng., June 29, 1949

Luxury apartments continued to go up in the wealthy suburbs, t in spite of much talk about the Fanfani plan very little else as built. Rome began to pride itself on having superseded aris in leading women's fashions, for Rome claimed that oman creations were more truly feminine. Social life became ther more feverish than ever before. The price of the *espressi,* nall cups of very good strong black coffee, which are a national ink, increased in some bars from 20 lire to 25 lire; this was minor blow for the already impoverished middle class.

A great many international gatherings took place in Rome in 49; there were also, of course, preparations outside the Vati- n city for the coming Holy Year. For the first time since the alian army conquered Rome from the pope on Sept. 20, 1870, e anniversary of that day was not officially celebrated. On ne 2, the third anniversary of the voting in favour of the esent republic, a monument was inaugurated to Giuseppe azzini. (*See* also ITALY.)

FILMS OF 1949.—*Ancient Rome* (Coronet Instructional Films).
(E. WI.)

omulo, Carlos P. (1901–), president of the general assembly of the United Nations, as born on Jan. 14 in Manila, P.I. After studying at the Uni- rsity of the Philippines, and in the United States at Columbia iversity, he taught English in the Philippines, then entered ewspaper work and became publisher of the *Philippines Herald.* survey of the far east that he made in 1941 won for him a ulitzer prize.

After the Japanese attack on the Philippines, Romulo was blic-relations officer to Gen. Douglas MacArthur, and was said be the last man to leave Bataan alive before its capitulation. e rejoined MacArthur in Australia as the latter's aide-de-camp, d later became a brigadier general in the U.S. army. He was ilippines delegate to the United Nations from that organiza- on's beginnings, and at the opening of the fourth annual ses- on of the U.N. in Sept. 1949, he was elected president of the neral assembly.

On receiving news of the Russians having brought about an omic explosion, Romulo said in September that the general sembly must itself face squarely the issue of atomic control, spite east-west deadlocks.

otary International: *see* SOCIETIES AND ASSOCIATIONS.

owing. The tempo of rowing increased during 1949. In England, 500,000 people watched Cambridge de- at Oxford by a quarter of a length in the closest finish since 1877. The time was 18 min. 57 sec. It was the Cantabs' 51st win in 95 races against Oxford.

In the United States there were four major regattas and many others of lesser importance. The fourth annual sprint championships of the Eastern Association of Rowing Colleges were held on Lake Onondaga, N.Y., with Syracuse university host. Fifteen thousand people saw 11 colleges and 32 crews participate. Harvard won all three events. At Poughkeepsie, N.Y., in the 47th annual Hudson river classic, 30 crews faced the starter in the three events. The University of California's Golden Bears dethroned the defending champion, the University of Washington, in the varsity race, but the Huskies took the junior varsity and freshman events. Yale halted Harvard's victory streak at New London, Conn., in the only four-mile race held in 1949 in the United States. At Buffalo, N.Y., the National Association of Amateur Oarsmen staged its most successful regatta.

In the Eastern Intercollegiate championships, Harvard dominated the field. In the freshman event Harvard's time was 6 min. 52.5 sec.; Massachusetts Institute of Technology was second and Princeton third followed by Cornell, Navy and Boston university. The junior varsity time was Harvard 6 min. 50.9 sec. with Princeton second and Yale third. Navy, Boston university and M.I.T. followed. The Crimson completed its sweep by winning the varsity race in 6 min. 48.8 sec. with the University of Pennsylvania second and Princeton third. Cornell, Yale and Navy trailed. Harvard made a perfect score in its triple triumph thereby winning the Rowe cup for the team championship. Princeton was second and Pennsylvania third in team scoring.

The Wright cup regatta for the lightweight championship of the east, held on Lake Carnegie, Princeton, N.J., went to Cornell over defending champion Princeton. The times were 7 min. 28.9 sec. to 7 min. 32.1 sec.: Harvard and Pennsylvania were third and fouth respectively.

The 47th annual Poughkeepsie classic was won by Ky Ebright's undefeated University of California varsity. The Golden Bears defeated a field of 12 major colleges in dethroning the Washington Huskies. The times: California 14 min. 42.6 sec., Washington 14 min. 45.1 sec., for the three-mile course. Cornell, Navy, Princeton, Pennsylvania, Wisconsin, Columbia, Syracuse, Stanford, M.I.T. and Rutgers followed in that order. Washington won both junior varsity and freshman contests at three and two miles in 16 min. and 9 min. 40.2 sec. respectively. The Poughkeepsie course was changed for the first time in many years by moving the finish one-half mile upstream in the interest of the spectators.

At New London, Coach Alan Walz' surprising Yale varsity beat favoured Harvard at four miles. Yale, stroked by Richard Krementz, won in 19 min. 52.8 sec. to Harvard's 19 min. 54.2 sec., a new record for the upstream course. It was Yale's first win over Harvard since 1935. The Blue also won the junior varsity contest, but Harvard took the freshman event.

The seventh annual Dad Vail Rowing association regatta was held at Poughkeepsie for the first time. Boston university crews swept the three races; water conditions became increasingly difficult as evidenced by the times for the Henley distance: freshman race 6 min. 33 sec.; junior varsity 7 min. 23.2 sec.; varsity 9 min. 16.6 sec. Eight colleges participated. Rollins college of Winter Park, Fla., was runner-up in the varsity race and Rutgers in the other two. For 1950, three new members were added to this association: Southern college, Lakeland, Fla., the University of Tampa, Tampa, Fla., and La Salle college, Philadelphia, Pa.

The 75th regatta of the National Association of Amateur Oarsmen was held at Buffalo, N.Y. The West Side Rowing club was host and won the Julius H. Barnes point trophy with victories in the light and heavyweight eights. Twenty-one rowing organizations were represented. Joseph Angyal of the New York Athletic club, singles champion in 1942 and lightweight champion for nearly a decade, won the championship singles. The Fairmount club of Philadelphia took four races and gained third place in team scoring. John J. Kieffer of that club won the quarter-mile dash, regaining his 1946–47 title. Eighty-one crews competed.

Schoolboy rowing showed still further progress. The 15th annual championships were held at Ecorse, Mich. Rudy Jezak of the Stuyvesant high school, New York city, won the singles title and the Washington and Lee high school of Alexandria, Va., the senior eights with the Lafayette high school of Buffalo second. Twenty-three schools of the United States and Canada were entered.

The 67th Royal Canadian Henley at St. Catharines, Ont., followed the National. St. Catharines Rowing club won the new Maple Leaf trophy with 318 points to 284 for the West Side Rowing club of Buffalo, defending champion. The Cleland memorial trophy went to St. Catharines Collegiate institute for high school eights. Joseph Angyal, newly crowned United States champion, won the Canadian title and the senior eight went to the Buffalo West Sides.

John B. Kelly, Jr., U.S. single-sculls champion for 1948, did not defend his title, but repeated his 1947 triumph in England by winning the Diamond Sculls. Princeton university lightweight eight again won the Thames challenge cup. Kelly remained abroad and won all the important European single-sculling championships, thereby becoming the amateur single-sculling champion of the world. To accomplish this feat, Kelly defeated Willie Collet, Belgian champion, at Brussels, Belg., Hans Jakob Keller, Swiss champion at Lucerne, Switz., and climaxed his season by defeating the best oarsmen of Europe and South America in the European championships at Amsterdam, Neth.

In professional rowing, Evan Padden, Australia, defeated Max Fisher of New South Wales for the world's professional single-sculling championship, which was vacated by Bobby Pearse. (C. L. Bt.)

Ruanda and Urundi: *see* Belgian Colonial Empire; Trust Territories.

Rubber. World production of natural and synthetic rubbers in 1949 was estimated at 1,895,000 long tons, and consumption at 1,870,000 long tons. Estimated consumption of the United States was 977,000 long tons, of which 407,000 were man-made. Outside the United States 33,000 long tons of synthetic rubber were consumed. Estimated production of crude rubber for 1949 was 1,455,000 long tons.

Table I.—*Production of Rubber in the Principal Countries of Its Origin*

(In thousands of long tons)

	1939	1948	First half 1949
Malaya			
Estates	244.4	403.6	192.6
Small Holders	115.7	294.5	132.8
Total	360.1	698.2	325.4
Indonesia			
Estates	195.	101.7	78.8
Small Holders	183.2	330.6	111.6
Total	378.2	432.3	190.4
Ceylon	60.	95.	41.
Indo-China	68.	44.	15.1
Africa	14.7	42.	12.*
World Total	1,000.	1,520.	697.5

*Three months only.

Natural Rubber.—Production of rubber in the countries of origin in 1948–49 generally exceeded the level of the last normal prewar year, 1939. Imports of natural latex to important consumer countries also indicated that prewar levels of consumption had been exceeded.

Table II.—*Net Imports of Natural Rubber Latex*

(In long tons—dry solids content)

Year	U.S.	United Kingdom	Canada	To all countries Estimated
1939	27,437	4,790	894	40,000
1941	34,798	6,020	2,141	44,000
1947	17,600	8,144	1,109	32,500
1948	32,630	9,835	1,667	53,300

Table III.—*Latex Consumed in U.S.*

(In long tons—dry solids content)

Year	Hevea	GR-S	Neoprene	Total
1946	5,724	24,810	13,603	44,137
1947	13,909	22,474	6,087	42,470
1948	28,489	23,441	4,500	56,430
1949*	29,900	22,200	3,000	55,100

*Estimated.

Table IV.—*U.S. New Rubber Consumption, 1949*

(In long tons)

	January	February	March	April	May	June
Natural	50,188	46,285	53,108	47,859	46,128	47,117
GR-S	28,619	26,898	29,793	28,544	27,627	28,865
Butyl	4,698	4,522	5,358	4,882	4,799	4,992
Neoprene and N-type	3,448	3,191	3,595	3,028	2,841	3,092
Total	86,953	80,896	91,854	84,313	81,395	84,066

The low prices for rubber at midyear (average price, May–June, for first quality rubber 16$\frac{2}{5}$ cents a pound as against 18$\frac{1}{2}$ to 19$\frac{1}{4}$ cents through April 1949) caused concern in the rubber-producing countries. Reports from Malaya, the source of 46% of the 1948 natural rubber, attributed the lower prices to the U.S. synthetic rubber industry and to the minimum consumption of synthetic rubber prescribed by U.S. law.

It was announced in December that British and French far eastern rubber growers would spend about $1,000,000 in the United States in 1950 to be raised by a tax on all rubber exported from Malaya, Ceylon and Indo-China for the purpose of promoting increased use of crude rubber.

With reference to dollar exchange, rubber had become the most important single article of commerce in the British economy. The U.S. importation of 728,000 long tons of crude rubber in 1948 represented dollar payments more than twice the amount paid by the United States in 1939. The U.S. per capita consumption of new rubber in 1948 was 16$\frac{1}{2}$ lb. while for the rest of the world it was 0.9 lb.

Synthetic Rubber.—The most important source of synthetic rubber, government-owned factories in the United States, continued to produce large amounts of general purpose rubber, GR-S (Table IV), at the level price to the manufacturer of 18$\frac{1}{2}$ cents per pound. Provisions pertaining to the production and use of synthetic rubber were imposed by the Rubber Act of 1948, which provided regulation to insure consumption of general-purpose and special-purpose synthetic rubbers in quantities at least equal to the minimums specified as essential to

Table V.—*U.S. Monthly Rubber Consumption, 1949*

(In long tons)

Transportation uses	January	February	March	April	May	June
Natural	34,019	30,741	36,045	32,622	31,965	32,207
GR-S	20,373	19,394	21,426	21,209	20,365	21,341
Butyl	4,516	4,365	5,113	4,751	4,643	4,800
Neoprene	70	77	108	110	99	90
N-type	13	6	7	21	27	27
Total Synthetic	24,972	23,842	26,654	26,091	25,134	26,258
Reclaim	8,925	8,584	9,997	10,375	10,215	10,545
NonTransportation uses						
Natural	16,169	15,544	17,063	15,237	14,163	14,910
GR-S	8,246	7,504	8,367	7,335	7,262	7,524
Butyl	182	157	245	131	156	192
Neoprene	2,860	2,680	2,946	2,470	2,250	2,531
N-type	505	428	534	427	465	444
Total synthetic	11,793	10,769	12,092	10,363	10,133	10,691
Reclaim	10,106	9,128	9,511	8,274	8,108	8,771

national security. This regulation involved only manufacturers of tires, tubes and camelback, and only smaller sized tires, mainly passenger car tires. The requirements in the first half of 1949 worked out so that one pound of GR-S was consumed for every three pounds of total rubber. In September the order was changed to permit one pound of GR-S to be used for four pounds of GR-S and crude rubber combined. The minimum tonnages required under the law worked out initially at 200,000 long tons a year for GR-S and 21,666 long tons of special-purpose rubbers, 15,000 long tons of which were for inner tube use.

Consumption of synthetic rubbers in relation to natural rubber for the first six months of 1949 is shown in Table IV, and for transportation and nontransportation uses in Table V.

By the end of 1949 GR-S factories had been equipped to produce up to 200,000 long tons of "cold" rubber, a superior tread rubber responsible for reported improvements in road wear of between 10% and 25% over tires made with crude rubber.

Among special-purpose synthetic rubbers used in the United States, Butyl continued in brisk demand for inner tube use; Neoprene was employed extensively in insulated wire and cable, and in other articles designed to resist oil and to stand flexing in the sun. N-type rubbers supplied the need mainly for structures with the lowest penetration by oil and for use in combinations with synthetic resins (see Tables IV and V). High styrene copolymers with butadiene extended their use to impart stiffening to rubber compounds, as are employed for heels. Acrylate copolymers were proving to be superior to other rubbers for service in sunlight and for withstanding higher temperatures in flexure. Silicon polymers of the Silicone and Silastic compositions were consumed at the rate of 250,000 lb. yearly, both for their advantage as sealing members in high temperature services and as electrical insulation.

The ultimate disposition of government-owned plants for synthetic rubber production was being considered by an interagency advisory and working committee (Robert C. Turner, chairman) reporting to John Steelman's office at the White House. This committee was drafting recommendations to congress on the basis of which legislation might be undertaken in 1950. The considerations involved were stockpiling of rubber, adequate supplies to the manufacturing concerns and the avoidance of factors involving shortages in supply.

The first annual report of the secretary of commerce under the Rubber Act of 1948 disclosed that in 1948 the required consumption of general-purpose synthetic rubber was 15% above the minimum amount required by the act. Of special-purpose synthetic rubber for inner tubes (Butyl) the 43,000 long tons used in 1948 far exceeded the minimum. Voluntary consumption by the industry in 1948 accounted for the consumption of approximately 112,000 long tons of general-purpose rubber in products free of control. Also, approximately 16,000 long tons of Butyl were consumed voluntarily as well as 38,000 long tons of other special-purpose synthetic rubbers. This voluntary consumption resulted either from better quality goods or lower cost of manufacture made possible by the synthetic rubbers.

Table VI.—*Rubber Products—Value for the U.S.*

	1947 Value f.o.b. plant	1939 Value f.o.b. plant
*Tires and inner tubes	$1,463,358,000	$503,448,000
Pneumatic casings	1,306,693,000	444,325,000
Inner tubes	150,001,000	55,938,000
Rubber footwear, pairs	159,190,000	43,112,000
Reclaimed rubber, pounds	36,040,000	16,962,000
Camelback and tire repair materials	42,714,000	19,428,000
Rubber heels and soles	72,175,000	31,335,000
Mechanical rubber goods	621,703,000	177,067,000
Druggist and medical sundries	44,440,000	13,733,000
Other rubber products	199,502,000	78,808,000

*Includes solid tires.

Reclaimed Rubber.—Reclaim (derived mainly from worn-out tires and tubes) is a supplement to new rubber. In 1948 the tonnage of reclaimed rubber used in the United States was 25% of the total new rubber consumed. This percentage compared with 29% in 1939 and 65% in 1942.

Finished Products.—In the United States in 1948, 70.6% of natural rubber consumption and 68.2% of synthetic rubber consumption was for transportation uses. Thus all other uses of rubber accounted for about 30% of the total new rubber consumed. The quantities of products manufactured in the United States for 1947 comprised 111,686,368 pneumatic tire casings, 97,596,708 inner tubes, 97,413,406 lb. of camelback and repair materials, and 635,762,626 lb. of reclaimed rubber. A comparison of the value of products in the years 1939 and 1947 respectively is presented for certain rubber commodities. (*See* also CHEMISTRY; PETROLEUM; RAYON AND OTHER SYNTHETIC FIBRES.)

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(H. L. TL.)

Rugby: *see* FOOTBALL.

Rulers: *see* PRESIDENTS, SOVEREIGNS AND RULERS.

Rumania.

A people's republic of southeastern Europe, Rumania is bounded on the north and northeast by the U.S.S.R., on the east by the Black sea, on the south by Bulgaria and on the west by Yugoslavia and Hungary. Area: 91,654 sq.mi. Pop.: (Jan. 25, 1948, census) 15,872,624. Languages (1948 census): Rumanian 85.7%; Hungarian 9.4%; German 2.2%; Yiddish 0.9%; others 1.8%. Religions (1947 est.): Greek Orthodox 81%; Greek Catholic 9%; Roman Catholic 7%; others 3%. Chief towns (pop. 1945 est.): Bucharest or Bucuresti (cap., 1948 census, 1,401,807); Cluj (110,956); Jassy or Iași (108,987); Timișoara (108,296); Ploești (105,114); Brăila (97,293); Galați (93,229). Chairman of the presidium of the Grand National assembly, Constantin Parhon; prime minister, Petru Groza.

History.—By a reshuffle of the government on April 15, Ana Pauker (*q.v.*) and Vasile Luca were made deputy prime ministers. This office was already held by Gheorghe Gheorghiu-Dej. These three people, who were also the three leading Communists of Rumania, thus formed an inner cabinet similar to the five deputy prime ministers of Bulgaria (*q.v.*).

During the year Rumania seemed in fact to be more thoroughly subjected to the U.S.S.R. than any of the other people's democracies. An indication of this was the replacement of the country's name by the initials R.P.R. (Republica Populara Română). While Hungarian or Bulgarian Communists still spoke of Hungary or Bulgaria, Rumanian Communists extolled the virtues and glories only of R.P.R. The attempt to concentrate patriotism on initials was an importation from the U.S.S.R.

A new trade agreement between Rumania and the Soviet Union, signed on Jan. 24, increased the mutual trade two-and-a-half times above the level of 1948. The sum was announced in soviet roubles—465,000,000 for 1949. The arbitrary nature of rouble exchange rates made it even more difficult to calculate how much Rumania was giving and receiving under this agreement than was the case when goods were priced in "1938 dollars." The number of soviet-Rumanian joint companies was increased by the creation of enterprises for joint exploitation of natural gas (Jan. 1949), metals, coal, building (July 5) and a soviet-Rumanian insurance company (July 29).

Rumania's system of alliances was completed on Jan. 26, 1949, when a treaty of mutual assistance was signed with Poland. The existing treaty of alliance with Yugoslavia was denounced by the Rumanian government on Oct. 1.

Collectivization of agriculture made some progress. The actual number of collective farms set up was however still small: only 55 at the end of September. As in Hungary, attention was concentrated on the liquidation of the *kulaks*. Mass collectivization was not to start until the power of the *kulaks* in the villages was broken and until adequate supplies of agricultural machinery were available in order to allow the new collective farms to benefit from the advantages of large-scale cultivation. The first process was supposed to take place by political education and by the initiative of the village masses themselves, but in practice was conducted by the party officials with the backing of the police. Even when violence was not used, economic strangulation was likely to be effective. A statement of the central committee of the Communist party, dated March 5, 1949, ordered "differential class taxation" and a "class policy in cereal collection and in the allocation of credits" to destroy the power of the *kulaks*. Supplies of machinery were to be provided by the tractor factory set up by the soviet-Rumanian joint company *Sovromtractor* and by the extension and improvement of the network of "machine-tractor stations," based on the similar institution in the U.S.S.R.

Official statistics published in October claimed that at the end of the third quarter of 1949 the targets set in the one-year plan for 1949 had been achieved to the extent of 109%. Among the more successful branches were lead and copper mining and some sections of machinery and chemicals, the least successful—the building industry. A new one-year plan was drawn up for 1950 and it was announced that in 1951 a five-year plan would be introduced. By 1955 yearly output of steel was to be five times that of 1938 and would be 1,250,000 metric tons. Output of coal was to be three times that of 1938, of cast iron eight times; of electric power four times the level of 1944. In 1955 Rumanian industry was to be capable of producing 6,000 tractors yearly and in that year Rumania would have, from various sources, a total of 25,000 tractors. This, it was officially stated, would constitute "a sound basis for socialist agriculture." An important construction project announced on May 26 was a Danube-Black sea canal. This would short-cut the Danube delta, and greatly facilitate trade between central Europe and the U.S.S.R.

From these various statements it could be concluded that the collectivization of Rumanian agriculture would for the time being move slowly but that the pace would be increased during the five-year plan period 1951–55. The pace would depend on the urgency of securing food and labour supplies from the countryside, and this in turn would depend on the priority given in Moscow to Rumania's industrialization. This would itself depend on Moscow's view of the international situation.

Political sovietization was carried further by the establishment in October of a state control commission similar to the organizations of the same name already existing in Yugoslavia and Bulgaria and modelled on the ministry of state control in the Soviet Union. (H. S-W.)

Banking and Finance.—Budget (1949 est.) balanced at 192,961,000,000 lei. Currency circulation (July 1948): 32,000,000,000 lei. Monetary unit: leu (pl. lei) with an exchange rate of 1 leu=0.65 U.S. cents (Dec. 1949).

Foreign Trade.—(1948): Imports U.S. $96,000,000, exports U.S. $160,000,000.

Transport and Communications.—Roads (1945): 43,163 mi. Licensed motor vehicles (Dec. 1948): cars 14,670, commercial vehicles 14,950. Railways (1948): 7,000 mi. Shipping (1948): number of merchant vessels 15, total tonnage 32,962. Telephones (1947): subscribers 127,153.

Agriculture.—Main crops (metric tons, 1947): maize 5,279,000; wheat 1,279,000; oats 180,000; barley 364,000; rye 66,000; potatoes (1948) 1,630,000; sugar, raw value (1948) 112,000; hemp (1948) 27,000; flax (1948) 3,700; cotton, ginned (1948) 3,000. Livestock: sheep (Dec. 1947) 7,000,000; cattle (Dec. 1946) 3,048,000; pigs (March 1946) 1,406,000; horses (Dec. 1947) 939,000.

Industry.—(1947) Industrial establishments 28,295; persons employed 462,305. Fuel and power: coal 162,000 metric tons; lignite 2,108,000 metric tons; natural gas 2,106,000,000 cu.ft.; electricity 712,000,000 kw.hr.; crude oil (1948) 4,500,000 metric tons. Raw materials (metric tons unless otherwise indicated, 1947): pig iron 91,000; steel 183,000; gold 2,231 kg.; silver 481,200 fine troy oz.; copper 531; lead 3,495; zinc 2,283. Manufactured goods (metric tons unless otherwise indicated, 1947): refined petroleum products 3,450,000; cotton yarn 11,300; cotton fabrics 3,200; sawn timber 1,359,000 cu.m.; cement 418,000.

Running: *see* Track and Field Sports.

Rural Electrification.

The increase in the number of electrified farms in the United States during 1949 was the largest recorded in any single year. As of June 30, 1949, the Rural Electrification administration estimated that 4,582,016, or 78.2% of the total number of farms reported in the 1945 farm census, were receiving central station electric service. This compared with 68.6% on June 30, 1948; 61.0% on the same date in 1947; 30.4% in 1940; and 10.9% at the start of the federal rural electrification program in 1935. REA estimated that at the close of its fiscal year on June 30, 1949, 1,277,153 farms were still without central station electric service.

During the calendar year 1949 REA borrowers, their consumers and REA itself established new peaks of operation and power use. In addition to a great amount of construction work to increase the capacity of their systems, the borrowers added an estimated 175,000 mi. of lines and 526,000 consumers to their systems. This increased their miles of line in operation by 23.0% and their number of consumers by 20.9%, the largest gain for any year of the REA program. At the end of 1949 the borrowers were serving a total of 3,044,000 consumers and operating a network of 934,000 mi. of lines.

The borrowers included 975 rural electric co-operatives, 41 public power districts, 24 other public bodies and 25 commercial power companies. They had 993 rural power systems in operation, an increase of 41 over 1948. REA approved loans for its borrowers amounting to about $421,000,000 during the calendar year 1949, about $37,000,000 more than during any previous year, increasing the cumulative total to $1,996,000,000. Loan funds advanced to borrowers during 1949 to pay for completed construction totalled $326,600,000, or about $41,900,000 more than the peak year of 1948. This brought loan funds advanced to $1,432,500,000.

REA borrowers distributed 30.3% more power in 1949 than in any previous year. They sold 6,199,000,000 kw.hr. of electric energy, exceeding sales of 1948, the previous high year, by 1,442,000,000 kw.hr. The average annual consumption of electricity per consumer on the REA-financed lines increased 145 kw.hr., from 2,084 to 2,229 kw.hr.

The power shortage continued to be severe in many sections of the country and prevented expansion of some systems. REA borrowers reported that some areas lacked generating capacity or transmission facilities or both.

During the calendar year 1949 about 13.0% of the total amount of power distributed by REA borrowers came from REA-financed generating facilities, but their output increased 29.5%. The installed capacity of REA-financed generators increased 32.5% to 335,000 kw.

The financial position of REA borrowers continued strong throughout 1949. At the close of the year they had paid $223,400,000 in principal and interest on their loans, an amount slightly above funds advanced by REA during the first five years of its program. Payments made by borrowers on principal in advance of due dates totalled $20,000,000.

On Oct. 28, 1949, legislation became effective to undertake a federal program of rural telephone loans, similar to the program of loans for rural electric service. The new program was to be administered by REA. (G. W. Hd.)

Canada.—Steady demand for service plus increased flow of transmission lines and hardware, and readily available electrical consumers' goods, kept power companies busy pushing their electricity to rural areas. At a cost of $3,000,000, about 3,000 more Alberta farmers were reached during the year. The Saskatchewan rural electrification program added only 1,200 farmers; and, to speed up the process, the provincial power commission was authorized to make a special study of the problems to be overcome. The Manitoba power commission pushed its plan to reach all accessible farms, and during 1949 spread into 38 additional rural areas and powered about 5,000 farms.

In Ontario, where the provincial government's hydro system has a practical monopoly of power development and distribution, rural electrification progressed strikingly. By the end of 1949 there were about 269,000 rural consumers, of which 40,000 were added during the year through the construction of 3,888 mi. of power lines. In 1949 the 1945-established Quebec rural electrification board reported that electricity co-operatives and private utility companies had built more than 9,000 mi. of rural lines.

Nova Scotia added 310 mi. of lines to its rural networks and connected up 1,500 additional rural and farm homes. (C. Cy.)

Rural Rehabilitation Loans: *see* Farmers Home Administration.

Russia: *see* Union of Soviet Socialist Republics.

Russian Literature.

The year 1949 was characterized in soviet literature, not so much for any positive achievements as for the violent, almost daily attacks in the press on literary, dramatic, musical and film critics for their "formalism" and "homeless cosmopolitanism." This campaign of vituperation represented a further stage in the general "antiwestern" movement inaugurated with the notorious Zhdanov purges in 1946. Several hundred critics, including many prominent and regular contributors to the soviet press, were involved, the attackers frequently being attacked in turn and accused of the same sins which they had imputed to the others. A peculiar feature of this campaign was its latent anti-Semitic flavour. The word "Jew" was not used outright, but the context in which the expression "homeless cosmopolitans" appeared was more than suggestive. Many of the attacked happened to be Jews using Russian pseudonyms, and these latter were systematically and maliciously disclosed.

A violent antiwestern bias characterized also the nationwide celebrations of the 150th anniversary of Alexander Pushkin's birth. The exposure of "Anglo-American imperialists" was the keynote of many a new play and story. Others sounded an ultrapatriotic note, glorifying everything Russian. Of the works by established soviet authors the following must be mentioned: the first part of Fyodor Gladkov's autobiographical *Detstvo* (*Childhood*), a colourful realistic picture of prerevolutionary life in a Russian village; Valentin Kataev's novel *Za vlast' Sovetov* (*For the Power of the Soviets*), dealing with wartime exploits and experiences of some characters in one of his best earlier novels, *The Lone White Sail;* and Veniamin Kaverin's novel *Otkrytaya kniga* (*The Open Book*), giving the life story of a soviet woman doctor. Vera Panova wrote a new novel, *Yasny bereg* (*The Clear Shore*), about a collective farm. There were no notable newcomers to literature.

Alexey Remizov published in Paris his first book in Russian since 1931, *Plyashuschy demon* (*The Dancing Demon*), a typical Remizov whimsy, part autobiographical, part fantastic and dreamlike. Its best section consists of fictitious memoirs of an old Russian scribe whose soul migrates from one historical or semihistorical character into another. The period covered is from the end of the 16th to the middle of the 18th century, and the narrative reflects Remizov's interest in the development of the Russian language and his concern with the conflict therein between the native and the foreign bookish elements. The book contains also some straightforward, though subjectively coloured, literary and theatrical reminiscences, of great interest and value to the student of modern Russian literature. Chapters from a new novel by Mark Aldanov, apparently a sequel to his *Before the Deluge,* appeared in one of the Russian newspapers in the United States. Of the younger writers, Nina Berberova published in Paris a book of six long stories, *Oblegchenie uchasti* (*Alleviation of the Lot*), with *émigré* life for their setting. The historian of Russian literature in exile found much interesting material, especially in the memoir genre, in the three Russian journals appearing outside Russia: *Novy Zhurnal* (New York), *Vozrozhdenie* (Paris), and *Grani* (U.S. zone of Germany). The last named drew for contributions mainly upon displaced persons and former soviet citizens now in Europe. (G. St.)

Rye.

The U.S. rye crop of 1949 amounted to 18,697,000 bu., the smallest crop since 1934. It was only 71% as large as the 26,449,000 bu. produced in 1948 and only 53% of the 1938–47 average production of 35,109,000 bu. Much of the decrease was accounted for by a cut in acreage harvested to the lowest level since 1873, 1,558,000 ac. in 1949, compared with 2,096,000 in 1948 and an average for 1938–47 of 2,874,000 ac. The yield was near normal at 12 bu. per acre against 12.6 bu. in 1948 and a ten-year average of 12.1 bu. Only 47% of the acreage sown was harvested, the rest being used for pasture, cover crop or abandoned. More than half of the total production was accounted for by five states: North Dakota (2,748,000 bu.), Minnesota (2,550,000 bu.), South Dakota (2,470,000 bu.), Nebraska (1,606,000 bu.) and Wisconsin (1,196,000 bu.).

Average prices received by farmers for rye declined from $1.44 per bushel in January to $1.13 in June, then slowly recovered about half of the decline. A nonrecourse government price support loan was available to farmers on the 1949 crop at an average rate equal to 72% of parity or $1.27 per bushel. The year end carry-over on July 1 of 3,282,000 bu. was approximately twice as large as the carry-over in 1948 but less than half as large as average for the years 1938–47.

World rye production in 1949, estimated preliminarily at 1,655,000,000 bu., approximated the 1948 crop but was about 100,000,000 bu. below the 1935–39 average. The Canadian crop, estimated at 10,011,000 bu., was only 40% as large as the exceptional 1948 crop, whereas the European crop of 705,000,000 bu. was about 7% larger than in 1948. The estimated production of 925,000,000 bu. in the U.S.S.R. approximated that of 1947 and 1948 and exceeded the prewar average. (J. K. R.)

Safety: *see* Accidents.

St. Christopher: *see* Leeward Islands.
St. Croix: *see* Virgin Islands.

St. Helena. A British colony in the south Atlantic consisting of the island of that name and the two island dependencies of Ascension and Tristan da Cunha. Respective areas: 47, 34 and 45 sq.mi. Population (1946 census): 4,748, 292 and 230.

The colony's resources being inadequate to provide work for its inhabitants, 100 farm workers sailed for the United Kingdom during 1949 under a new government scheme for employment overseas. The fourth advisory council was constituted and appointed by the governor in June.

Finance.—Budget (1947 est.): revenue £83,628 (including £49,170 from grants), expenditure £96,278. (Jo. A. Hn.)

St. John: *see* Virgin Islands.
St. Kitts-Nevis: *see* Leeward Islands.

St. Laurent, Louis Stephen (1882–), Canadian prime minister, was born on Feb. 1 at Compton, Quebec, and educated at St. Charles college, Sherbrooke, and Laval university, Quebec city, Que. Called to the bar at Quebec in 1905, he practised as a lawyer until Dec. 10, 1941, when he entered federal politics as minister of justice and attorney general. From Sept. 4 to Dec. 10, 1946, he held the additional post of secretary of state for external affairs, but on the latter date relinquished the portfolio of justice. He was elected as liberal member for Quebec East on Feb. 9, 1942, and re-elected in 1945. In 1948 he succeeded W. L. Mackenzie King as leader of the Liberal party and on Nov. 15, when King laid down the office of prime minister, St. Laurent became the 17th prime minister of the dominion of Canada.

On June 27, 1949, for the first time St. Laurent led the Liberal party in a federal election, and won a crashing victory of 196 seats out of 262, the biggest governmental majority in Canadian history. He led two sessions of parliament, at which Canada became the first nation to ratify the North Atlantic treaty, and which took the final steps in nationhood by requesting amendment of the British North America act. In Feb. 1949 St. Laurent visited Pres. Harry S. Truman of the United States. (*See* also Canada, Dominion of.) (C. Cy.)

St. Louis. St. Louis, Mo., had a population of 816,048 in the 1940 federal census, with an additional 541,567 persons in the greater metropolitan area. In 1949 the metropolitan St. Louis census committee reported an estimated 905,000 persons in the city and 773,500 in adjoining areas. Mayor in 1949: Joseph M. Darst.

In the April 5, 1949, municipal elections the Democrats won control of the city government from the Republicans, who had been in control since 1941. The Democrats elected a mayor and gained a majority vote in the board of aldermen, with 16 votes to 14 for the Republicans.

Also in the municipal election a bipartisan board of 13 freeholders was selected to draft a new charter designed to modernize the city government. Drafting of the charter had to be completed by April 1950 for submission to voters.

Housing continued short in 1949, but plans were well under way for four large slum-clearance projects to be completed in five years with federal aid. A federal loan of $731,000 for preliminary work on the projects, to comprise 12,000 housing units, was approved.

A committee of business and industrial leaders was formed to work with the mayor in an effort to raise private finances for additional projects.

The city in 1949 issued a total of 6,068 permits for building construction valued at $30,575,441. Included were permits for 1,576 new housing units valued at $11,516,057. The razing of 407 old dwellings in the year brought the net gain in housing units to 1,169.

St. Louis entered 1949 with an accumulated operating deficit of $3,680,000, but this was expected to be reduced by an operating surplus of $500,000 anticipated for the end of the fiscal year in April 1950.

The tax rate was $2.74 on the $100 property valuation; assessed value of real and personal property $1,207,496,960; bonded debt $82,000,000. Expenditures for operating the city government in the fiscal year ending in April 1949 were $35,466,071. Receipts were $33,568,044. The budget for the fiscal year ending in April 1950 was $38,555,477 for operating expenses.

A 1947 census of manufactures report issued by the bureau of census listed 2,330 industrial establishments in St. Louis with an average of 141,232 employees for the year. (E. L. R.)

St. Lucia: *see* Windward Islands.
St. Pierre and Miquelon: *see* French Union.
St. Thomas: *see* Virgin Islands.
St. Vincent: *see* Windward Islands.
Sales, Retail: *see* Business Review.
Salt: *see* Mineral and Metal Production and Prices.

Salvador, El. A republic on the west coast of Central America, the only one without a Caribbean littoral, and the smallest but most densely populated country on the isthmus. Area: 13,176 sq.mi.; pop. (mid-1948 est.): 2,100,000. The capital is San Salvador (pop., 1944 est., 110,435). Other cities are Ahuachapán (13,765); Cojutepeque (15,317); Nueva San Salvador, formerly Santa Tecla (24,239); San Miguel (18,676); San Vicente (13,637); Santa Ana (47,631); and Sonsonate (17,540). Language: Spanish; religion: predominantly Roman Catholic. The government in 1949 was under the direction of a temporary junta.

History.—The revolutionary junta which replaced Pres. Salvador Castañeda Castro in Dec. 1948 maintained control over the country throughout 1949. However, preparations were made for drawing up a new constitution and returning to a democratic order.

The resignation of Lt. Col. Manuel J. Córdova (announced Jan. 5) as head of the five-man governing board left the chief direction of public affairs to Maj. Oscar Osorio. In October, however, Maj. Osorio and Reinaldo Galindo Pohl both left the junta to campaign for the election of their partisans to an assembly empowered to draw up a new constitution. Maj. Oscar Bolaños and Humberto Costa remained in the governing body. Two decrees of a strong nationalistic character were passed during the year: one outlawing all political parties with foreign financial support or with religious affiliations, and the other prohibiting commercial and industrial firms in the country from employing less than 90% national personnel.

El Salvador's favourable economic status was further bolstered in November by an increase of more than 65% in the value of its coffee on the world market. A new suspension bridge over the Río de la Paz boundary, jointly financed by Guatemala and El Salvador, was completed July 14.

The chief labour dispute was a strike of the International Railways workers beginning May 2 and ending May 17 with most of the demands of the workers being met. One government decree establishing a universal social insurance program for employees in the country and another formulating a settlement procedure for individual labour-management disputes went into effect Oct. 12.

Education.—There were 1,519 primary schools with 3,701 teachers and approximately 100,000 students in 1945; about 50 secondary schools enrolled 6,982 students; and the national university had 835 students. National appropriations for education in 1947 amounted to 2,903,040 colones.

Finance.—The monetary unit is the colón, valued at 40 cents U.S. on Sept. 12, 1949. The 1949 national budget called for expenditures of 62,002,514 colones. During the first six months of the year, customs receipts were up 5,000,000 colones over the same period of 1948. As of Aug. 31, 1949, the Central bank's gold and foreign-exchange holdings amounted to $34,800,000 ($28,000,000 on the same date of 1948). The foreign debt at the end of 1945 was $18,300,000.

Trade and Resources.—Exports in 1948 totalled $45,600,000, including gold, silver and specie ($40,100,000 in 1947); imports, at $41,500,000 ($36,900,000 in 1947). The United States took 77.33% of the exports and furnished 73.45% of the imports. Coffee (861,874 bags of 157 lb. each, valued at $36,167,047) was the chief export commodity. The 1948–49 coffee crop established a new national record of 1,190,920 bags. Other important crops (with 1948–49 production figures) were corn (247,277 short tons), cotton (5,150 short tons), sugar (25,450 short tons) and sesame seed (19,952 short tons). There were 764,778 head of beef cattle in the country in 1948.

Communications.—In 1948 there were two major railroads with 377 mi. of main lines; 700 mi. of surfaced highways and 1,250 mi. of all-weather dirt roads; 2,237 mi. of telegraph lines; 5,093 mi. of telephone lines; over 4,000 telephones; and approximately 14,500 radio receiving sets.

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Salvation Army.

The Salvation Army is a world-wide religious and charitable organization, which during 1949 had corps and outposts in 94 countries and territories throughout the world and preached the Gospel of Christ in 81 languages and dialects. Its 17,329 corps (local units) included 26,511 commissioned officers, 97,369 local officers (laymen) and thousands of soldiers (members) and adherents.

In its social-service work, the Salvation Army finds practical manifestation of "Christianity in Action." This takes such forms as children's homes and hospitals, maternity homes and hospitals, family welfare bureaus, men's rehabilitation centres, boys' clubs, summer camps for needy mothers and children, missing persons bureaus and many other activities.

The International Salvation Army was commanded in 1949 by General Albert Orsborn, the sixth general, elected on June 21, 1946, with headquarters in London. In the United States, Commissioner Ernest I. Pugmire was the national commander, with headquarters in New York city. During the year the organization intensified its vigorous drive for increased missionary effort in many countries.

Salvation Army commissioners from all over the world met in London in July to discuss plans for the Salvation Army's continuing attack on godlessness and misery and suffering.

In the United States during 1949 the Salvation Army held 93,439 meetings on street corners. In its social-service program, 20,525 patients were treated in 6 clinics and dispensaries; 1,845 missing persons were located; 34 maternity homes and hospitals for unwed mothers cared for 2,285 women and children; 6,484 mothers and children were sent to summer camps. A total of 105 men's social-service centres provided shelter and work for 5,408 men.

In the field of prison work, 10,798 prisoners were assisted on discharge and given employment; 1,879 prisoners were paroled in care of the Salvation Army, whose officers devoted 17,012 hours to prison visitation. At its 70th annual convention, the American Prison association elected for the first time a Salvation Army officer, Envoy J. Stanley Sheppard, as president for 1950. (*See* also CHURCH MEMBERSHIP.) (E. I. P.)

Samoa, American.

The Samoan Islands extend from 13° 26′ to 14° 22′ S. lat. and from 168° 10′ to 172° 48′ W. long., and are about 2,700 mi. east of Australia and 2,200 mi. south of the Hawaiian Islands. American Samoa consists of the inhabited islands of Tutuila, Tau, Olosega, Ofu and Aunuu, and the uninhabited coral atoll, Rose Island. Swain's Island, 210 mi. northwest of Tutuila, was made a part of American Samoa in 1925. Total area of American Samoa is 76 sq.mi. and total population in 1949 was 18,373 with about four-fifths of the population on the main island of Tutuila. Pago Pago, on Tutuila, is the capital.

History and Government.—A tripartite treaty signed by the U.S., Great Britain and Germany in 1899 divided Samoa into two possessions with the U.S. receiving what is now American Samoa and Germany the rest. American Samoa is an unorganized U.S. possession governed by a naval officer appointed by the president. Capt. Thomas F. Darden, Jr., was appointed governor in 1949.

On Feb. 25, 1948, a bicameral legislature, known as the Legislature of American Samoa, was established in place of the old legislature, the annual *Fono*. The house of representatives consists of 54 members, popularly elected for two-year terms; the House of Alii is composed of the 12 persons who hold the highest-ranking titles in American Samoa. The legislature has only advisory powers. The governor also has an advisory council consisting of from five to seven Samoans. The judiciary consists of a high court, district courts and village courts. Each of the three administrative districts has a native governor appointed by the governor of American Samoa. They in turn appoint village chiefs.

Education.—In 1949 there were 46 public schools and 7 private schools. Total enrolment was 5,117 and there were 139 teachers. About 94% of the population was literate according to the 1940 census.

Production and Trade.—The main products are copra and native handicraft, principally mats and rugs woven from grass. Principal crops, with estimated annual production, are copra (1,725 metric tons), breadfruit (7,700 metric tons), bananas (19,492 metric tons) and taro (2,900 metric tons). Imports in the fiscal year ending June 30, 1949, totalled $886,701; exports amounted to $459,056. Total revenues during the fiscal year ending June 30, 1949, amounted to $422,739 and U.S. appropriations for American Samoa amounted to $55,000; expenditures totalled $626,775. Total resources of the Bank of American Samoa, an island government institution, amounted to $1,778,914 as of Nov. 12, 1947.

Transportation.—There are 65 mi. of roads on Tutuila, one air strip but no railroads.

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Samoa, Western: *see* NEW ZEALAND, DOMINION OF; TRUST TERRITORIES.

San Francisco.

The resident population of the city of San Francisco, Calif., on Jan. 1, 1950, was estimated at 824,500. The U.S. census reported 827,400 residents on Aug. 1, 1945. Preliminary reports for 1949 revealed 19,300 births in San Francisco and 9,800 deaths. Elmer E. Robinson, mayor of San Francisco, took office Jan. 8, 1948.

The index of general business activity in San Francisco at the end of the first 11 months of 1949 averaged 0.3% above the same period a year before. Construction permits were up 9.8% in value; bank debits were 0.3% higher and postal receipts 16.9%. Department store retail sales were at about the same level as the preceding year, when they reached an all-time high. Movement of passengers and freight by airplane was up as were ship arrivals, electrical energy sales and domestic water consumption.

The number of taxable retail sales outlets in San Francisco on June 30, 1949, totalled 24,003. Estimated taxable sales for 1949 at retail amounted to $1,311,000,000. New industries and expansions for San Francisco during 1949 (preliminary estimates) amounted to 110 with outlays of $6,500,000, compared with 160 with outlays of $16,900,000 in 1948. Living costs average for the first three-quarters in San Francisco were 0.3% below the same period of 1948.

San Francisco's funded debt outstanding on Sept. 30, 1949, was $156,451,000. Estimated revenue receivable during the fiscal year 1949–50 amounted to $133,320,341, of which $60,647,398 was from taxes. The total assessed valuation for the 1949–50 fiscal year was $1,508,959,293. The tax rate for 1949–50 fiscal year was $5.66 per $100 assessed valuation.

Progress bonds for $87,050,000 were approved by the people of San Francisco at the Nov. 1947 election to provide for basic public improvements including $22,200,000 for rehabilitation of the municipal railway system; $22,850,000 for street improvements, including special provision for several major through streets and street extensions; $5,000,000 to provide off-street parking facilities to relieve congestion and expedite traffic; $12,000,000 to pay the cost of improving and enlarging public playgrounds and recreation centers for the city and county of San Francisco; and $25,000,000 to pay the cost of construction of a second pipe line across the San Joaquin valley to augment the existing water supply. During June and November 1948 bonds for $63,890,000 were approved by the people of San Francisco for additional basic improvements. They included $48,890,000 for school construction and $15,000,000 for sewage treatment works. During 1949 bonds for $10,000,000 for airport and $4,000,000 for water department storage facilities were approved by San Francisco voters. Most of the above projects would require several years for completion. (R. B. Kr.)

San Marino.

A small republic in northern Italy, San Marino is 14 mi. southwest of Rimini. Area: 38 sq.mi. Pop. (July 31, 1949, est.): 12,418. Language: Italian. Religion: Roman Catholic. San Marino is governed by two *capitani reggenti* appointed every six months by a grand council of 60 members elected by universal suffrage every four years.

History.—Elections held on Feb. 27, 1949, resulted in a clear victory for the existing Socialist-Communist Committee of Freedom which won 2,815 votes as against 2,010 by the Christian Democratic alliance. In the grand council the government had 35 seats and the opposition 25, against 40 and 20 respectively before the elections. Relations between San Marino and Italy were somewhat strained and the Italian government suspended arrangements to pay several hundred million lire arrears under a 1939 treaty regulating the financial relations of the two countries. As the finances of San Marino were in a poor state—the deficit of the 1949–50 budget being estimated at 220,000,000 lire—the government decided in July to open a gambling casino as a tourist attraction.

Finance.—Budget 1948–49 was allegedly balanced at 420,000,000 lire and that of 1949–50 at 492,000,000 lire. San Marino uses the Italian currency.

Santo Domingo: *see* Dominican Republic.
São Tomé: *see* Portuguese Colonial Empire.
Sarawak: *see* British Borneo.

Saskatchewan.

Central of three prairie provinces of Canada, Saskatchewan was created by parliament in 1905. Area: 251,700 sq.mi. of which 13,725 sq.mi. are lakes; pop. (1941) 895,922; (1949 est.) 861,000. Chief cities: capital, Regina (58,245); Saskatoon (43,027); Moose Jaw (20,753); Prince Albert (12,508).

History.—The only provincial Co-operative Commonwealth Federation (socialist) government continued in power during 1949. The legislature prorogued after giving royal assent to 136 bills. The most significant included: restriction of margarine colouring to 1.6 degrees; provincial action for a land conservation and irrigation program; appointment of a provincial power commission as wholesaler for rural electricity; creation of a $1,000,000 fund for loans and grants to deserving students.

Education.—After a special building survey, the provincial department of education announced that $5,000,000 would have to be spent between 1950 and 1954 to replace worn-out schools and provide necessary expansion. The latest revised statistics available in 1949 were for the 1946 provincially controlled schools: total enrolment 173,559; average daily attendance 138,267; teachers 7,031; total revenue $15,747,768.

Communications.—During 1949 117.5 mi. of highway were hard surfaced, 398 gravelled, 348 graded. The government-owned bus line reported a $14,000 loss for 1948.

Finance.—Reporting on the 1948–49 fiscal year, the provincial treasurer gave total revenues as $55,623,000, expenditures as $54,609,000. During the period the province's net debt was reduced to $114,627,370, fourth lowest in Canada, and the sinking fund was increased to $44,000,000, second highest in Canada. Because of a different system of budgeting, the estimates for the 1949–50 fiscal year appeared lower, but were in fact no reductions from the previous year. They were: revenues $49,110,950; expenditures $49,101,220.

Agriculture.—Drought cut into 1949 crop returns when 30% of the 120,000 farms got inadequate rain; about 45,000 farmers in the southern parts of the province received $13,000,000 in federal drought-loss payments. Some of the more major 1948 agricultural production figures (with 1947 in parentheses) were: gross value of principal grain crops, $381,600,000 ($379,176,000); wheat, 191,000,000 bu. (170,000,000 bu.); cattle marketed, 465,998 (481,405). Average cash income per farm in 1948 was $4,275.

Industry.—In May 1949 minimum wages were increased from $18.50 to $21 weekly in the larger centres, and from $16 to $18.50 in smaller towns. Average weekly wages in Oct. 1949 were $42.54, compared with the 1948 weekly average of $39.20. In mid-1949 the provincial department of resources reported that 123 new companies had incorporated in 1948 with a total authorized capital of $7,424,600.

Minerals.—During the year 12 United States companies searched for oil over a 36,000,00-ac. crown-land area. Oil production during 1948 and 1947 was as follows (with 1947 in parentheses): 113 (67) wells pumping 865,715 (614,117) bbl. Natural gas production for 1948 of 387,000,000 cu. ft. was 125% greater than for 1947. More than 1,200 radium claims were staked in 1948. The value of 1948 mineral production was an all-time high of $34,421,000, nearly $2,000,000 above that of 1947. (C. Cy.)

Saudi Arabia: *see* Arabia.
Savings Banks: *see* Banking.

Sawyer, Charles

(1887–), U.S. secretary of commerce, was born on Feb. 10 in Cincinnati, O., studied at Oberlin college, Oberlin, O., and at the University of Cincinnati and was admitted to the bar in Ohio in 1911. That same year he was elected to the Cincinnati city council. From 1921 he was a member of the firm of Dinsmore, Shohl, Sawyer and Dinsmore. He served as lieutenant governor of Ohio beginning in 1933, and won the Democratic nomination for governor in 1938, but was defeated in the election by John W. Bricker. In 1944–45 he served as U.S. ambassador to Belgium and minister to Luxembourg. He became secretary of commerce on May 6, 1948.

His activities and public addresses during 1949 disclosed that U.S. plans for combating a threatened economic slump included emphasis on public works programs in industrial areas that were hardest hit. When in July President Truman named a 20-man panel to co-ordinate government buying and place contracts especially in the hardest-hit areas, Secretary Sawyer was delegated to choose the areas to be assisted first. The first area he chose was New England, and by August his department was able to report an upswing in business. On Aug. 30 he was directed by President Truman to report on methods of unifying government transportation programs.

Schuman, Robert

(1886–), French government official, was born on June 29 in Luxembourg. Admitted to the bar in Metz before World War I, he was elected deputy of the recovered *département* of Moselle in 1919 and was afterward continually re-elected. On March 21, 1940, he was appointed undersecretary of state in Paul Reynaud's cabinet, and in April 1941 he was arrested by the Germans and sent to Germany, but he escaped and went into hiding in France. In Oct. 1945 he was again elected deputy of the Moselle, and later re-elected. He held various cabinet posts from 1946 to 1948, twice during that time heading governments himself (Nov. 1947 to July 1948, and briefly in Aug. 1948). On Sept. 11, 1948, he became foreign minister in Henri Queuille's cabinet.

On April 4, 1949, in Washington, he signed the North Atlantic treaty for France. In the French national assembly on July 25, in the debate on the ratification of the North Atlantic treaty, he declared that it had been forced upon France by the eastern bloc which came into existence even before the signature of the Brussels treaty. On Aug. 10, he was present at the opening of the first session of the Council of Europe at Strasbourg. On Oct. 28 he was re-appointed minister of foreign affairs in the Georges Bidault cabinet. Speaking on Nov. 13 at Montigny, Loiret, he said: "Geography makes it necessary for us to build a Europe with Germany. We must give Germany her place in Europe, but nothing more than her place." (*See* also FRANCE.)

Schweitzer, Albert (1875–), French theologian, philosopher, musician and physician, was born in Kayserburg, Alsace, on Jan. 14. His musical education was started at home, beginning with the piano when he was five and the organ when he was eight. He attended the *gymnasium* at Mulhouse, France, and in 1900 took his licentiate in theology at the University of Strasbourg. While still at work on his *Quest of the Historical Jesus*, a historical criticism of the New Testament, he began in 1903 the biography of J. S. Bach later recognized as the definitive account of that master's life. In his autobiography, *Out of My Life and Thought* (1933) Schweitzer wrote that he had "settled" with himself to consider his life justified if he lived until he was 30 for science and art, in order to devote himself from then on to the direct service of humanity. Accordingly, he began the study of medicine (1905–11) to prepare himself for the life of a medical missionary, at the same time continuing to give organ recitals before the Paris Bach society which he had founded. He married Hélène Bresslau, a nurse, in 1912, and two years later the couple took up duties at a missionary post at Lambaréné, French Equatorial Africa. There, between intermittent periods of lecture and concert tours in Europe and time out for additional study and writing, Schweitzer spent the years attending to a steady stream of native patients, and supervising the hospital at Lambaréné which was gradually enlarged through his efforts. His unique devotion to the service of humanity, his compelling example of a philosophy lived in practice, as well as his versatility—all these in an era of cold wars and specialization of interests—commanded increasingly wider attention during the 1940s and led to the reissue of many of his earlier writings. In 1949 he visited the U.S. as principal speaker at the Goethe bicentennial convocation in Aspen, Colo.

ALBERT SCHWEITZER with Mrs. C. S. Clark, president of the Conference of Club Presidents, and Program Chairmen at a luncheon in Chicago, Ill., where he received an award for his service to humanity. Schweitzer was on a visit to the U.S. to attend a Goethe bicentennial convocation which opened at Aspen, Colo., June 27, 1949

Scotland: *see* GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

Scrap: *see* SECONDARY METALS.

Sculpture. Following divergent directions during 1949, sculpture increased the gap between classical and experimental forms which had prevailed since the first decade of the 20th century, thus continuing as perplexing to many as in other ways it was satisfying to many more. Major work was done in the monumental field supporting the classical form; but further significant progress was made with experimental work by artists who sought the acceptance of their theories by museums and art collectors with new signs of approval. To a larger number of new practitioners the experimental trend appeared popular.

Because of the increasing acceptance of abstract formalism, nonobjective and expressionist sculpture flourished in the leading art centres of the world, notably those of Paris, London and New York city; widely scattered museums took up the trends, recognizing it as their duty to show and explain them. Exports ranged from the neoclassical work of Aristide Maillol, through the romantic of Marino Marini and Ernst Barlach, who were popular, to the strongly expressionist work of Henry Moore and Jacques Lipchitz. In scholastic quarters interest was fed by the encouragement toward creative activity shown by progressive art schools and universities.

Despite the seething concern for new ideas, major achievement was shown in classical sculpture projects, such as the monumental works of James Earle Fraser and Leo Friedlander for the Lincoln Memorial circle at the approach to the Arlington Memorial bridge in Washington, D.C. (four heroic equestrian groups for this site having reached the bronze-casting stage). With memorial sculpture in wide demand, among the prominent examples completed were a bust of former Secretary of Defense James Forrestal, designed by Kalervo Kallio, son of the former president of Finland, for the national capital, and a heroic George Washington figure for the Masonic national memorial, Alexandria, Va., completed by Bryant Baker.

Abstract sculpture undertook to supply fresh solutions for monumental and decorative projects, receiving occasional encouragement, while appealing routine work was done in various styles for public and business buildings, notably in the relief form. Most unusual was the adaptation of sculpture to a new purpose by Isamu Noguchi, who turned his talent for imaginative abstract forms to the designing of modern furniture, considering a chair or a table as another piece of sculpture. This original work seemed a likely solution of the problem of furniture for modern, open homes where the object would stand by itself, to look right from all angles.

The most fruitful field was perhaps that embraced by experimental sculptors who, like Noguchi, drew upon organic and biomorphic forms as a basis for their own free invention. With Constantin Brancusi, a pioneer of this trend in semiretirement, powerful influences were Pablo Picasso, who had turned strongly to expressionist sculpture, Hans Arp, the Italian Alberto Viani and the Englishman Henry Moore. Moore, a challenging figure, was honoured by an impressive exhibition at Wakefield in Yorkshire, later seen in Brussels and Paris at the beginning of a long continental tour. Viani, with the classical sculptors Giacomo

Manzù and Marino Marini, who drew impressively upon classical and Etruscan sources, were admirably shown in New York's Museum of Modern Art exhibition of contemporary Italian art during the year.

Various sculptors were seen to advantage: in England F. E. McWilliam, who exhibited a number of surrealist pieces; R. Butler, who showed ingenious inventions in wrought iron, and Robert Adams, who in London and Paris showed a developing skill in semiabstract carving. In the United States, José de Creeft, doing romantic and decorative work; Theodore Roszak, experimenting in metal; the romantic Koren der Harootian and David Hare, who exhibited expressionistic sculpture, all worked in the forefront of the profession. Sculptors such as Fritz Wotruba in Austria, Frank Dobson, Ben Nicholson, Barbara Hepworth and Karin Jonzen in Britain; Ivar Johnsson and Bror Hjorth in Sweden, John Raedecker in the Netherlands and Gerhard Marcks in Germany were also among the active.

Organized groups supported sculpture: the Royal Society of British Artists in London concentrated, in their winter exhibition, upon the medium and produced the most lively mixed show of the year. The Whitney Museum of American Art, New York city, devoted most of one of its annual exhibitions to sculpture, placing a strong accent on advanced contemporary styles. Perhaps the largest concentration of all was the massive Sculpture International, third of a series in Philadelphia, Pa., which assembled quantities of work from abroad as well as work by U.S. sculptors.

Two traits which seemed to predominate during the year were diversity of material (allied to a consciousness and respect for its innate qualities) and a growing tendency among sculptors to think less in terms of the solid form than of space itself. It was thus but one step farther from representation to exploration of the hollow, the declivity and to the meaning of inner form. Lipchitz, Alberto Giacometti (who remained a strong influence), the followers of the Russian constructivists Naum Gabo and Antoine Pevsner and Moore were seen to pursue this course until they had pierced their solid material through and through. Younger artists supported this preoccupation, and, finding new instruments as well as diverse materials, resorted to fusing and forging. In many a modern workshop sculptors wielded the blowtorch as well as the chisel, fashioning by welding as well as by carving. In these ingenious ways sculpture pushed forward into a future of the widest unusual possibilities. (*See* also ART EXHIBITIONS.)

FILMS OF 1949.—*Maillol* (Franco-American Audio-Visual Distribution). (C. BU.)

SEC: *see* SECURITIES AND EXCHANGE COMMISSION.
Secondary Education: *see* EDUCATION.

Secondary Metals.

The salient data on the recovery of secondary metals in the United States during recent years are shown in Table I, as reported by the U.S. bureau of mines.

Tonnages recovered from old scrap are shown in addition to totals, as it is only old scrap that adds to the current supply; new scrap recoveries represent the rehabilitation of new metal not yet put into use and so do not represent an increase in the supply.

Iron and Steel Scrap.—Data on consumption and consumers' stocks of iron and steel scrap during recent years are shown in Table II, as reported by the U.S. bureau of mines.

Table I.—*Secondary Nonferrous Metals Recovered in the U.S.*

(In thousands of short tons or fine ounces)

	1943	1944	1945	1946	1947	1948
Copper—tons						
As metal	137.9	102.1	112.9	136.9	303.1	284.0
In alloys	935.1	835.4	875.0	647.4	639.8	671.2
In compounds	13.0	13.4	18.7	19.2	18.8	17.6
Total	1,086.0	950.9	1,006.5	803.5	961.7	972.8
From old scrap*	427.5	456.7	497.1	406.5	503.4	505.5
Lead—tons						
As metal	58.3	55.0	61.1	73.7	111.5	131.9
In alloys	283.8	276.4	301.9	319.1	400.5	368.2
Total	342.1	331.4	363.0	392.8	512.0	500.1
From old scrap*	310.7	289.9	309.8	344.5	444.6	432.7
Zinc—tons						
As metal	78.9	79.5	83.9	81.4	97.1	99.6
In alloys	257.9	229.2	234.6	174.2	158.2	176.1
In compounds	31.6	36.7	41.9	45.0	55.5	48.9
Total	368.5	345.5	360.4	300.7	310.8	324.6
From old scrap*	84.2	113.2	91.3	77.2	75.0	74.2
Tin—tons						
As metal	5.2	4.2	3.7	2.9	3.2	3.5
In alloys	32.3	27.9	30.9	24.3	26.4	26.0
In compounds	0.3	0.5	0.5	0.4	0.5	0.6
Total	37.8	32.6	35.1	27.7	30.1	30.1
From old scrap*	25.2	21.3	24.0	17.6	19.0	20.1
Aluminum—tons						
As metal	5.9	2.3	2.1	2.1	5.1	2.4
In alloys	306.8	321.7	295.4	275.4	339.3	283.9
Total	314.0	325.6	298.4	278.1	344.8	286.8
From old scrap*	33.1	22.9	27.3	90.5	163.8	95.6
Magnesium—tons						
Total (in alloys)	11.4	14.2	9.2	5.1	9.5	7.8
From old scrap*	0.2	0.1	0.8	1.2	4.6	4.5
Nickel—tons						
Total	6.9	4.3	6.5	8.2	9.5	8.9
From old scrap*	1.9	2.2	2.2	2.7	2.8	2.9
Antimony—tons						
Total	15.5	15.9	17.1	19.1	23.0	21.6
From old scrap*	15.4	15.6	15.1	16.1	19.2	18.0
Platinum—ounces	68.6	85.9	58.9	40.4	54.2	58.5
O.P.M.†—ounces	33.0	33.5	37.2	32.3	32.9	35.4
Gold—ounces	3,006	7,337	8,855	13,143	14,066	12,898
Silver—ounces	44,113	56,189	58,361	36,647	27,866	23,897

*Secondary metal recovered from old materials, the remainder having come from the reworking of new plant scrap.

†Other platinum group metals.

Table II.—*Data on Iron and Steel Scrap in the U.S.*

	Steel Production	Scrap Consumption		Scrap Stocks	
		Purchased	Plant	Purchased	Plant
1939	52,799	76,705	19,622	3,373	1,937
1941	82,839	25,312	33,904	2,559	1,167
1943	88,837	26,614	35,037	4,204	1,668
1944	89,642	25,923	35,426	2,984	1,435
1945	79,702	25,230	30,961	2,705	1,218
1946	66,603	23,350	26,134	2,167	1,230
1947	84,894	29,194	31,405	2,901	1,416
1948	79,340	29,191	29,079	4,031	1,384
1949 (9 months)	65,011	18,456	21,541	2,940	1,367

For the first time since before World War II the ratio between purchased and plant scrap was back to a 50:50 normal in 1948, but purchased scrap became scarcer in 1949. Stocks improved appreciably in 1948, but it is to be noted that all of the increase was in purchased scrap; stocks of plant scrap dropped even lower than during the war years, indicating prompt utilization of the available supply. (G. A. Ro.)

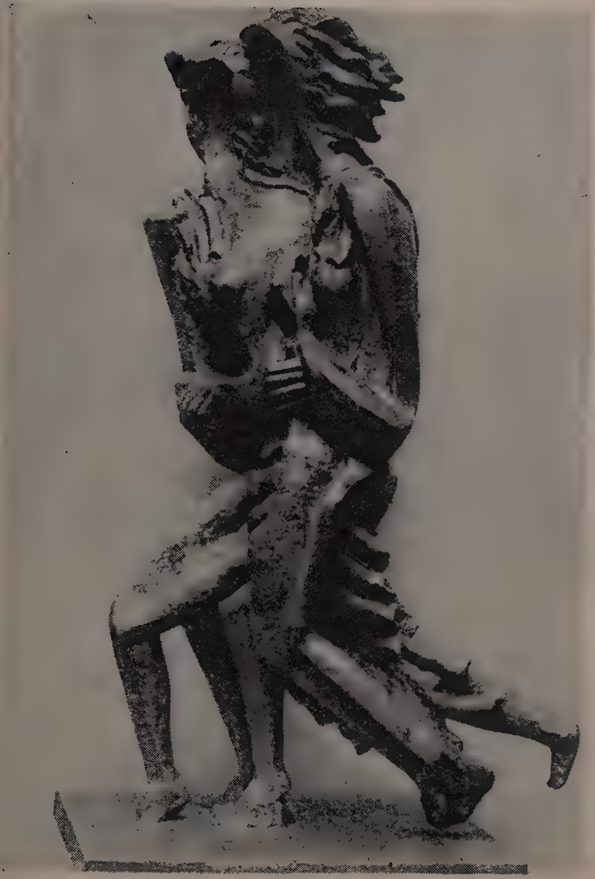
Secret Service, U.S.

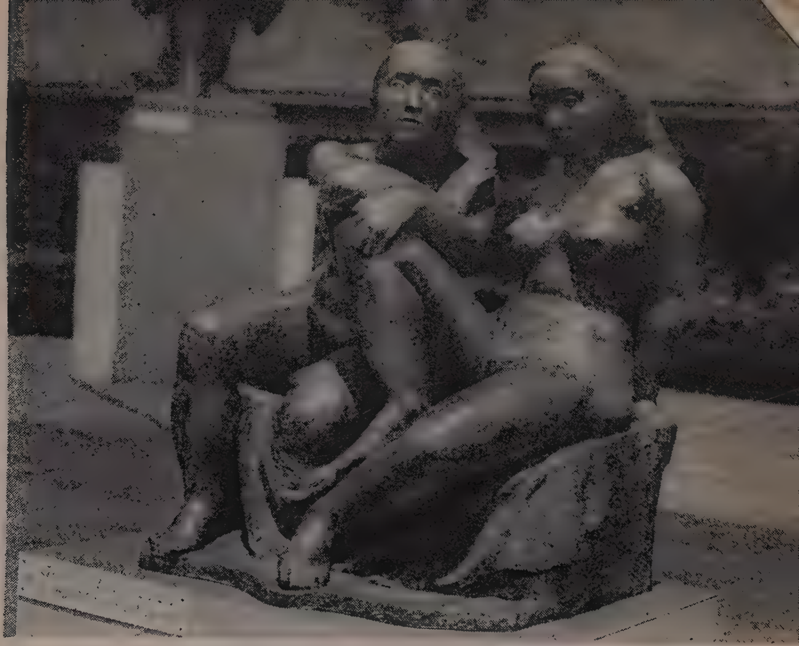
The major responsibilities of the United States secret service, an agency of the treasury department, are the protection of the president of the United States, of members of his family and of the president-elect, and the suppression of counterfeiting and forgery of currency, checks, bonds and other government obligations.

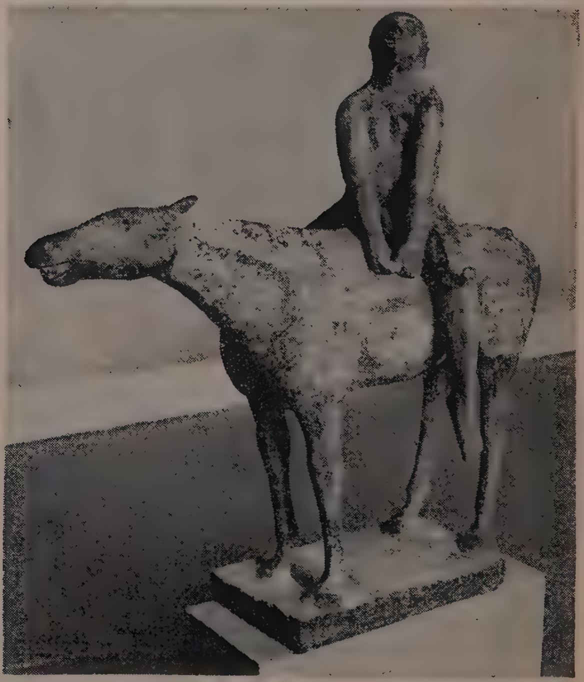
For the fiscal year 1949 secret service agents captured $949,742 in counterfeit bills and $8,021.61 in counterfeit coins in the United States. Of these totals, $331,021 in counterfeit paper money and $7,041.84 in spurious coins represented losses to merchants and other victims of passers. The balance was captured before it could be circulated. The total of counterfeit bills included $158,978 made in foreign countries.

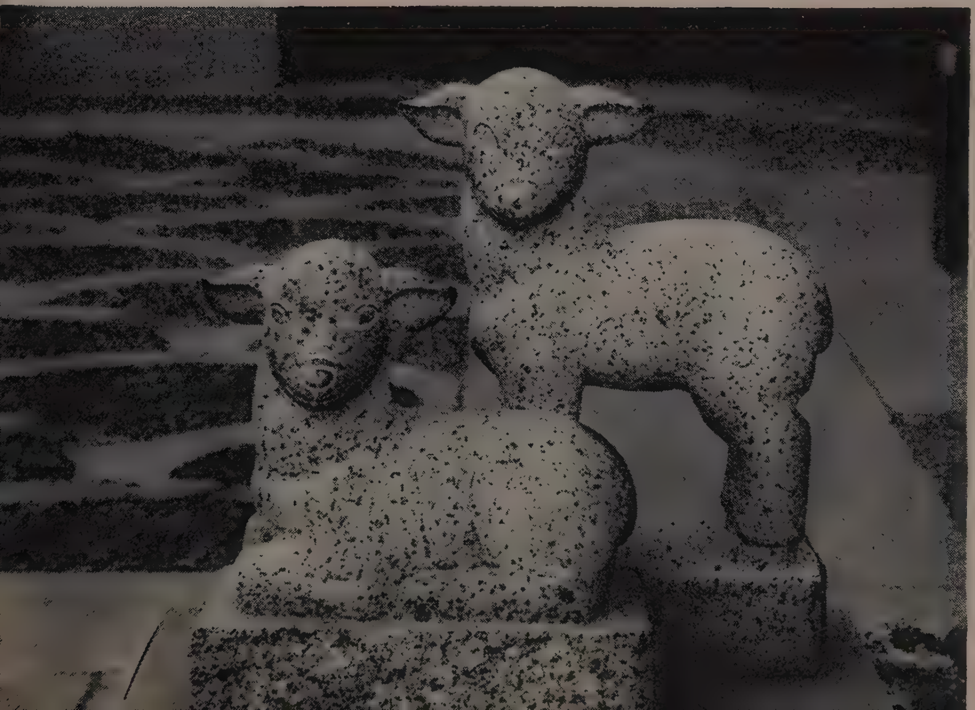
There were 114 new counterfeit note issues during the year. Agents captured 10 plants for the manufacture of counterfeit bills and arrested 207 persons for violating the currency laws, an increase of 31% in arrests, as compared with the previous year.

For the first time in several years the secret service captured a gang of postage-stamp counterfeiters in New York city and seized 8,000,000 counterfeit three-cent stamps. The offenders were also involved in the counterfeiting of currency and of









CONTEMPORARY SCULPTURE exhibited at the third Sculpture International organized by the Fairmount Park Art association and placed on view at the Philadelphia Museum of Art in June 1949. The comprehensive exhibit included 252 pieces by artists from 13 nations. Above, left: "Menades" (bronze) by Ossip Zadkine of France; above, right: "Gemini # 1" (bronze) by Oronzio Maldarelli of the U.S.; above: "Cavaliere" (bronze) by Marino Marini of Italy; left: "Lambs" (granite) by Sylvia Shaw Judson of the U.S.

traveller's checks.

In November, the secret service arrested a man in New York city who attempted to negotiate $244,000 in counterfeit bonds of the kingdom of Belgium.

The secret service received for investigation 34,160 government checks bearing forged endorsements and 7,312 forged government bonds. Agents completed investigations of 33,427 forged checks totalling $2,255,829.63 and of 9,105 forged bonds with a maturity value of $617,767. There were no losses to bond purchasers whose bonds had been stolen and fraudulently negotiated, since the government replaces all such bonds. There were 2,001 persons arrested for check and bond forgery. At the close of the fiscal year 1949 there were 11,221 forged checks and 3,177 forged bonds still awaiting investigation.

Of the 33,427 check cases investigated, 15,730, or 47.1%, were thefts from the mails involving $1,085,363.17. There were 10,312 income-tax-refund checks investigated, representing 30.8% of all closed check investigations. Next in order were veterans' checks (19.9%) and allotment and allowance checks (16.7%).

There were 1,817 persons arrested for check forgery and 1,676 convictions. Bond forgery arrests totalled 184, and there were 173 convictions. Convictions include dispositions on cases pending from prior years.

Arrests for all offenses aggregated 2,346; convictions, 2,125.

The secret service closed 45,384 criminal cases and 1,735 noncriminal cases for a total of 47,119 investigations completed during the fiscal year. Fines in criminal cases totalled $38,343.45, and jail sentences aggregated about 2,116 years, with additional sentences of 2,333 years suspended or probated.

(U. E. B.)

Securities: *see* Stocks and Bonds.

Securities and Exchange Commission.

Created in 1934, this bipartisan, quasi-judicial agency of the U.S. federal government administers the following statutes in the general field of securities and finance.

Securities Act of 1933.—Congress sought by this law to protect the interests of investors and the public by prohibiting fraud in the sale of securities in interstate commerce and by requiring that, in the public distribution of securities, all pertinent facts be disclosed, so that investors would be able to make a realistic evaluation of the securities' worth and an informed decision whether to acquire them.

To obtain such disclosure, the law requires the issuing company to file with the SEC a registration statement containing the required financial and other information, and the delivery to investors of a prospectus reflecting the salient registration disclosures. During the year ended June 30, 1949, $5,300,000,000 of securities were registered for public sale by 429 companies, increasing to $54,000,000,000 the total of registered securities since 1933.

Registration is neither a warranty of the worth of securities nor a guarantee against loss in their purchase. Instead, its objective is to provide disclosure of the facts upon which investors may protect themselves against imprudent investments or speculations.

Securities Exchange Act of 1934.—This law extends the "disclosure" doctrine of investor protection to securities listed and traded on the securities exchanges throughout the U.S. Through registration of these securities with the commission and the subsequent filing of annual and other periodic reports by the issuing companies (the latter requirement also applies to most Securities act registrants), disclosure is provided of information essential to the investing public's appraisal of the securities' worth. At the end of the year, 3,645 security issues of 2,194 companies were listed on the national exchanges; and during the year, exchange trading therein approximated $11,000,000,000.

Additional protective provisions require disclosure of all pertinent facts in communications to holders of listed securities soliciting their proxies (votes) upon corporate matters, and that officers, directors and 10% stockholders report their holdings of and transactions in all equity securities of listed companies and be accountable to the issuer for their short-term trading profits in such securities (thus tending to curb improper use of "inside" information). During the year, 1,702 proxy solicitations were processed by, and 18,523 ownership and trading reports were filed with, the commission.

The investing public is further protected against abusive practices in the securities markets (both exchange and over-the-counter) by statutory provisions and commission rules designed to establish and maintain just and equitable principles of trade and to curb misrepresentation, market manipulation and other fraudulent securities' violations. Compliance therewith is a prerequisite to the continued conduct of a securities business by the 18 exchanges and 4,000 broker-dealer firms registered with the commission at the year's end, as is true of one registered national association of over-the-counter dealers.

To enforce these measures, the commission is empowered to investigate complaints or other indications of possible securities' violations and to require sworn testimony and the production of books and records pertinent thereto. If a violation is thus discovered, the commission is further authorized: (1) to seek federal court orders enjoining the acts or practices complained of; (2) to refer the facts to the department of justice for criminal prosecution of the offenders; or (3) to suspend or expel persons or firms from membership in exchanges or the over-the-counter association or revoke broker-dealer registrations with the commission. The latter, so-called "administrative" sanction may be imposed only after full opportunity for hearing, and the commission's decision is subject to review by the appropriate U.S. circuit court of appeals. In addition to the many hundreds of civil actions and criminal prosecutions successfully maintained, the commission invoked the administrative sanction in more than 230 cases (with no court reversals) by the close of the year.

Margin trading in securities is subject to regulation under this act by the board of governors of the federal reserve system.

Public Utility Holding Company Act of 1935.—The objective of this law is twofold: (1) regulation of the financial and related affairs of electric and gas public utility holding company systems to protect investors, consumers and the public against abusive practices found by congress to have been prevalent in the creation of huge utility empires during the 1920s; and (2) effectuation of a thoroughgoing readjustment of such systems through an integration process which would limit their operations to a group of interconnected properties in a single area or region (and require divestment of companies and properties not retainable as a part of such system), and a simplification process under which undue complexities in corporate and capital structures would be eliminated and (incidental thereto) voting power redistributed among security holders on a fair and equitable basis.

By the end of 1949 more than 700 nonutility properties had been divested from utility systems; more than 600 utility companies or properties had been divested from integrated systems (although in certain instances they became a part of some other system); and comparable achievements had been obtained in the elimination of complexities and the redistribution of voting rights (such as substitution of all-common-stock capitalizations for multiple security structures; dissolutions of unnecessary and uneconomic companies, and mergers, consolidations and recapitalizations accompanied by a "fair and equitable" redistribution of voting power among security holders in recognition of the equity which each class had in the company's assets and earnings; virtual elimination of huge accumulations of unpaid dividend arrearages on preferred stocks; and substantial debt-to-property ratio reductions).

At the end of the year, 72 holding companies with 570 subsidiaries having aggregate assets of $14,000,000,000 were registered with the commission, reflecting a reduction of 63 companies during the year. Of utility financing, $1,000,000,000 was passed upon by the commission during the year. In contrast with the disclosure requirement of the Securities act, this law prescribes standards with which utility securities must comply before their issuance and sale may be authorized (assuming the issuing company is part of a registered holding company system).

At the end of the year, trust indentures covering $16,800,000,000 of debt securities had been qualified under the Trust Indenture Act of 1939, and 358 investment companies and 1,045 investment advisers were registered under the Investment Company Act of 1940 and the Investment Advisers Act of 1940, respectively. The commission during the year participated in 80 corporate reorganization cases under chapter X of the National Bankruptcy act, serving as independent, expert adviser to federal courts. (*See* also STOCKS AND BONDS.) (O. L. Ds.)

Seeing Eye, The: *see* SOCIETIES AND ASSOCIATIONS.

Seismology. The strongest earthquakes of 1949 were those of July 10 in eastern Turkestan and Aug. 22 off the coast of British Columbia. Both were magnitude 8 on the instrument scale, but damage was limited because of the location. The most disastrous shock of the year, on Aug. 5 in central Ecuador, killed more than 8,000 persons, injured 20,000, and caused property damage of several million dollars. Pacific Northwestern United States experienced the worst earthquake in its recorded history on April 13. The Puget sound cities of Olympia, Tacoma and Seattle were hardest hit. Damage in Washington was estimated to be at least $15,000,000. On April 20 the most severe earthquake in Chile in ten years was reported to have killed 57, injured 89 and caused considerable property damage. Shocks also caused damage in Nevada and California in the United States, in Turkey, Arabia and the Philippine Islands.

Methods to enable study of response characteristics of all electromagnetic seismographs were developed. Electronic equipment developed at the Witwatersrand in South Africa provided radio transmission of seismograms for as much as 10 mi. or more.

Publication of the results of the seismic refraction surveys at Bikini indicated a depth of several thousand feet below the lagoon floor to the igneous basement rock. Seismic reflection surveys in the Atlantic suggested a reflecting horizon at depths ranging from negligible to several thousand feet beneath the ocean floor. Studies of crustal structure based on the records of the Helgoland and Haslach ammunition explosions in 1947 and 1948 were published. Investigations based on instrumentally determined magnitudes of earthquakes indicated that the occurrence of aftershocks may be explained as an elastic afterworking or creep in rocks. Microseisms continued to engage the attention of many seismologists because of their meteorological and oceanographic applications. A relationship between cold fronts and microseism storms was reported by several observers, but others supported the theory of variations of pressure on the sea floor accompanying a low-pressure area as the origin of microseisms. Publication of Beno Gutenberg and C. F. Richter's *Seismicity of the Earth and Associated Phenomena* provided a valuable reference source on the relative seismicity of various parts of the earth.

The U.S. coast and geodetic survey greatly expanded its teleseismic program through development of a rapid communications system. A subcommittee on seismology with headquarters at the Seismological institute of the University of Chile, Santiago, was set up in the Commission on Cartography of the Pan-American Institute of Geography and History. (*See* also COAST AND GEODETIC SURVEY, U.S.; DISASTERS.) (M. C. RT.)

Selenium: *see* MINERAL AND METAL PRODUCTION AND PRICES.
Senate: *see* CONGRESS, UNITED STATES; ELECTIONS.
Senegal: *see* FRENCH UNION.

Seventh-day Adventists. The celebration of the centenary of united activity on the part of the religious group which later became the Seventh-day Adventist Church was held on April 9 and 10, 1949. The church at that time numbered 681,363 communicants, who contributed annually more than $42,000,000.

The major administrative problem of 1949 was the reorganization of the mission activities in China, which became necessary because of the Communist victories. A provisional church government, under Chinese church officers, was set up in all Communist-occupied China. American missionaries driven out of the occupied area were sent largely to Japan and also to other parts of the far east and to India. The executive committee appealed to American communicants to increase their Sabbath school offerings to missions by 50%.

Radio evangelism increased; by 1949 it was estimated that three out of four families in the United States could hear the weekly "Voice of Prophecy" program. Danish and Arabic were added to the list of languages for overseas broadcasts. Radio Tangiers broadcasted the program for the equatorial North African area.

The American Temperance society, the church's temperance organization, campaigned vigorously in support of local and state prohibition laws, notably in Oklahoma. The society's paid-up membership in 1949 was more than 56,000.

The autumn council of the executive committee, held at St. Louis, Mo., from Nov. 6 to 16, considered, among other items: the question of government grants to religious institutions; the creation of a school of alcoholic studies; and the establishment of a home for aged workers.

The quadrennial session of the world conference was to be held in San Francisco, Calif., July 10 to 22, 1950.

The *Review and Herald* is the weekly church paper. (*See* also CHURCH MEMBERSHIP.) (F. D. N.)

Seychelles. A British colony in the Indian ocean. Area: 156 sq.mi. Pop. (1947 census): 34,594. Governor: Percy Selwyn Selwyn-Clarke.

History.—During 1949 a court of appeal judgment invalidated legislation passed in Nov. 1948 by an improperly constituted legislative council. Strong exception was taken locally to the nomination to the legislative council by the governor of C. Collet, formerly acting attorney general. During the year a number of cases came before the court for the refund of income tax paid under alleged threats during Collet's attorney generalship. The administration of the colony was debated in the house of commons. Toward the end of the year Collet resigned from the legislative council.

Finance and Trade.—Budget (1949 est.); revenue, Rs. 3,286,436; expenditure, Rs. 3,424,085. Foreign trade (1948): imports, Rs. 4,792,877;

exports, Rs. 5,237,618. Currency: the rupee. Exchange, Nov. 15, 1949: 1 rupee = 21 cents U.S. (Jo. A. Hn.)

Sheep: *see* Livestock.

Sherman, Forrest Percival (1896–), U.S. chief of naval operations, was born on Oct. 30 in Merrimack, N.H., studied a year (1913–14) at Massachusetts Institute of Technology, Cambridge, Mass., and entered the U.S. Naval academy, Annapolis, Md., graduating in 1917, second in his class. During World War I he saw duty in European waters, and after that war he became a naval aviator. Early in World War II he served with the war plans division of the office of chief of naval operations and later was given command of the carrier "Wasp," which was sunk by the Japanese in 1942. He then served as chief of staff to Vice-Adm. John H. Towers, commander of the navy's Pacific air forces, and as deputy chief of staff to Adm. Chester W. Nimitz, commander in chief of the Pacific fleet. In Dec. 1945 he was named deputy chief of naval operations and helped draw up the original plans for unification of the armed services. In Jan. 1948 he was named commander of the U.S. naval force patrolling the Mediterranean, and it was from this duty that he was recalled to Washington, Nov. 1, 1949, to become chief of naval operations, succeeding Adm. Louis E. Denfeld.

Shipbuilding. The world tonnage of merchant ships of 1,000 gross tons or more, as of June 30, 1949, was distributed as follows among the principal maritime nations:

	Number of vessels	Gross tonnage		Number of vessels	Gross tonnage
United States*	3,514	25,977,200	Italy	355	2,142,300
British Empire	3,146	18,867,000	Russia	430	1,324,100
Norway	865	4,416,100	Greece	223	1,255,700
Sweden	537	1,792,200	Denmark	299	1,033,300
Netherlands	481	2,683,200	Japan	290	1,144,000
France	475	2,620,500	Other countries	1,697	6,327,800
Panamá	453	2,948,300	Total	12,765	72,531,700

*Excludes vessels on the Great Lakes

The total of 72,531,700 gross tons of vessels in the world fleet represented an increase of 1,947,200 gross tons since June 30, 1948, but the U.S. fleet during the same period decreased by 130 vessels totalling 712,300 tons.

The Shipbuilders Council of America reported, as of Oct. 1, 1949, 925 vessels, each of 1,000 gross tons or more, aggregating 7,081,259 gross tons, under construction in the world.

United States.—At the beginning of 1949, shipbuilding in the private shipyards of the United States consisted of 76 merchant vessels, aggregating 1,187,850 gross tons, and 2 dredges, totalling 24,672 displacement tons. At the end of the year these private shipyards had under construction or on order 39 merchant vessels, aggregating 639,000 gross tons, and one dredge totalling 21,572 displacement tons.

During 1949 the private shipyards of the United States delivered 33 tank vessels, of 1,000 gross tons or more, aggregating 538,051 gross tons, and one 3,100-displacement-ton dredge, as compared with 28 seagoing vessels, totalling 163,486 gross tons, in 1948, and one dredge of 1,100 displacement tons.

Merchant Ships Under Construction in the World, Oct. 1, 1949

	Number of vessels	Gross tonnage
Great Britain	397	3,200,193
Sweden	149	1,078,010
United States	53	900,453
France	72	443,169
Netherlands	59	428,133
Denmark	41	203,563
Italy	26	191,100
Norway	40	142,092
Belgium	25	135,423
Japan	17	133,340
Spain	26	128,569
Australia	9	52,820
Canada	11	44,394
Total	925	7,081,259

THE "VENTURI," designed by Gar Wood and made public in July 1949. According to Wood, the ship's roll was cut to a minimum by the cushioning movement of air through the "wind tunnel" formed by the twin hulls

Contracts for only five seagoing merchant vessels were placed in private shipyards of the United States in 1949. Many of the smaller coastal and inland shipyards, however, had reasonable activity in the construction of barges, towboats and other small craft. The total volume of this work for the first 11 months approximated 62,000 gross tons for nonpropelled craft and 19,000 gross tons for self-propelled units.

As of Sept. 1949, employment in the ship-repairing branch of the industry in about 80 yards had dropped to 25,725 from 56,708 the year before, a decrease of approximately 31,000 or 58%. This substantial reduction in employment resulted from the completion of the reconversion of merchant vessels from wartime requirements back to peacetime requirements, and the decrease in the volume of United States flag shipping in operation. Employment in the shipbuilding branch of the industry, however, was slightly in excess of 29,500, or 4,500 more than prevailed a year before.

The average hourly earnings in the industry for shipbuilding and ship repairing in Sept. 1949 was $1.632. (*See* also Shipping, Merchant Marine.)

(H. G. S.)

Great Britain.—Shipbuilding in the United Kingdom during 1949 was distinguished by a better flow of materials and equipment which permitted greater production than in 1948. A start was made with more of the orders already on the books of the companies. During the closing months of 1948 many contracts had been placed for oil tanker vessels, and these represented a bigger proportion of the tonnage under construction than ever before. Work was still proceeding on some large liners but fresh contracts for ships of this class were unusual. Builders were still awaiting more orders for ordinary cargo, or tramp vessels. Few such ships had been built after the end of World War II.

Experience during the greater part of the year showed that diesel ships and steamships burning oil could still be operated profitably at the lower levels of freight rates, whereas losses would have been incurred in the employment of coal-burning steamships with coal at about £4 a ton in the United Kingdom.

The advantage which ships consuming oil had over steamships was, however, largely lost when, after the devaluation of sterling in terms of dollars in September, oil prices outside the United States were raised by about 40%. There remained, however, the merits which the use of oil had over the burning of coal in cleanliness, speed of bunkering and reduction of labour. Freight rates were too slow to respond to the higher cost of expenditure in dollars in world trades, because of an apparently sufficient supply of the tonnage available for the trade offered.

On March 31, 1949, the proportion of the total tonnage under construction throughout the world which was built in the United Kingdom was 47.7%, making the share of shipyards in other countries 52.3%. On June 30 the share of the United Kingdom was rather less at 46% and that of other countries correspondingly more at 54%. The United Kingdom's share again declined by the end of September—to 45.5%—and the share of yards in other countries rose to 54.5%. The total volume of work in United Kingdom yards after World War II included a substantial amount for owners abroad. At the end of March 1946, about 100,000 tons of such shipping was being built. By March 1949 it had risen to 742,000 tons, and by Sept. 30, 1949, the amount had expanded to 766,000 tons. The shipping under construction on Sept. 30 included 293,000 tons for Norway and 103,000 tons for Argentina.

Better supplies of materials were reflected in the United Kingdom in an increase in the work started, which was pronounced at the end of the third quarter. During the three months ended March 31 work was begun on 73 vessels of 274,000 tons. In the June quarter new work was represented by 64 ships of 288,000 tons, and in the three months ended Sept. 30 work was begun on 80 ships of 402,000 tons.

For the first three quarters of 1949, 250 ships, representing 990,000 tons, were completed in the United Kingdom. For the whole of 1949 shipping delivered was 1,213,000 tons. It was therefore, clear that total output for 1949 would well exceed that for 1948.

Films of 1949.—*Down to the Sea* (British Information Services).

(Ct. M.)

Shipping, Merchant Marine.

On Sept. 30, 1949, there were 1,214 ocean-going merchant vessels of 1,000 gross tons and over, totalling 14,350,000 dead-weight tons, in the active United States merchant marine. This was about 200 less than the number active on Dec. 31, 1948. Of the active vessels, 1,032 were privately owned and 182 government-owned. There were in addition 196 vessels temporarily inactive and 1,974 (excluding some special types) laid up in reserve.

The number of privately owned vessels (active and inactive) had increased by 13 over the number on Dec. 31, 1948. The active privately owned United States merchant marine of 12,452,000 dead-weight tons on Sept. 30, 1949, was only 3,794,000 dead-weight tons larger than the prewar privately owned fleet active on June 30, 1938. The ships of the 1949 fleet, however, were larger, faster and relatively newer.

The number of vessels owned by the government in active service decreased by about 150 from Dec. 31, 1948, to Sept. 30, 1949, while the number laid up in reserve increased by about 130 during the same period. The decline in active government-owned ships was expected to continue until expiration of the maritime commission's authority to charter vessels on June 30, 1950. After that date there would probably be no active government-owned vessels, with the possible exception of a few operating in specialized trades.

U.S. flag vessels carried 46.3% of the total U.S. export and import trade in the first six months of 1949, in contrast to 67.5% in the corresponding period of 1946. Decrease in cargoes shipped under Economic Cooperation administration authorization (50% of which had by law to be carried in U.S. ships) together with increasing competition from merchant marines of other nations whose operating costs were relatively lower, forced the withdrawal of many U.S. flag ships from operation. Vessels in tramp trades, which were not subsidized, were especially vulnerable to foreign competition, and many of these vessels which had been chartered from the government were withdrawn from service. (P. B. F.)

Europe and Asia.—By the end of 1949 many of the heavy war losses of the British and Allied nations, including Norway, had been made good. The British merchant navy had recovered its prewar volume, although the proportions between different sections, mainly passenger and cargo liners, ordinary cargo ships or tramps and oil tankers, had not been re-established.

Passenger liners continued to resume their regular services after reconditioning extending over a year or more following war duties and the return of troops and the carriage of emigrants from Europe to the new countries, notably South Africa and Australia. Some large new liners were commissioned, including the new Orient liner "Orcades," of 28,000 tons and valued at £3,250,000, which completed her maiden voyage from London to Australian ports early in the year. The Cunard White Star liner "Caronia," of over 34,000 tons and valued at more than £4,000,000, was the largest ship built anywhere since the end of World War II.

In the spring the Royal Mail liner "Magdalena," of 17,500 tons and valued at £2,300,000, was commissioned and was wrecked near Rio de Janeiro in April. The "Presidente Perón," first of three ships of about 14,000 tons gross each built in the United Kingdom for the Argentine government, left Southampton on July 20 on her maiden voyage to Buenos Aires. The cost of the vessel exceeded £1,500,000.

On August 25 the liner "Rangitoto," of 22,000 tons gross, owned by the New Zealand Shipping company, left London on her maiden voyage to Wellington, New Zealand. A sister ship, the "Rangitane," was completed at the end of 1949.

The "Himalaya," of 28,000 tons gross, was commissioned by the Peninsular and Oriental Steam Navigation company in Sept. 1949 and sailed from Tilbury on her maiden voyage on Oct. 6. The "Himalaya" was similar in size to the "Orcades." Each vessel was larger and faster than any liner previously built for either company. They were the outcome of a policy of fewer but faster and larger ships which was intended as a means of helping offset the much higher building costs and operational expenses.

The French liner "Ile de France," of 45,000 tons gross, returned to trans-Atlantic service in July 1949 after reconditioning at Saint-Nazaire which occupied more than two years. The internal rebuilding of the ship after strenuous war service cost between six and seven times the original price of the vessel in 1926.

A great increase in shipbuilding costs caused managers much concern. Although insured values were generally raised when World War II broke out, the payments for ships lost only partially met the bills for new ships. Replacement of vessels made necessary by advancing age raised a more acute problem, since the amounts set aside annually for depreciation on much lower valued ships fell far short of the costs of the new vessels. The task of shipping management was further increased by slower working in ports. As an example the ships in a large British fleet on the average formerly spent 28 days in port compared with four weeks at sea, but in 1949 they spent 36 days in port.

Shipping was particularly liable to be affected by decisions of governments which greatly influenced the course of trade. There was much waste of costly refrigerated space in South American liners during the first five months of 1949 because supplies of meat were not forthcoming from Argentina as had been expected. Restrictions on imports to South Africa early in the year, and more drastic curtailments after midsummer, meant a rush to ship cargo in periods immediately preceding the relevant dates and, subsequently, a great falling off in shipments, particularly after the middle of June.

Several countries announced intentions to develop mercantile marines. India contemplated a mercantile marine of 2,000,000 tons gross within the next five or seven years; but a keen protagonist for a large Indian merchant navy had seen difficulties in the way of securing the construction of the ships, of paying for them at the current prices and of obtaining sufficient trade for them when built. The Italian government announced its intention of having a merchant navy by 1952 on almost the 1941 level of tonnage and, of course, a much more up-to-date one. Japanese shipping re-appeared in local services and Poland expressed a desire for a substantial mercantile marine. The occupying powers sanctioned the construction of a number of cargo ships and tankers in Western Germany not exceeding 7,200 tons gross and a speed of 12 knots. By a later agreement Germany was permitted also to build six special ships which might be refrigerated vessels, fruit carriers or oil tankers.

(Ct. M.)

Shoe Industry.

The shoe industry, in 1949, was faced with the problem of adjusting prices to a level where the consuming public would be willing to buy. Consumers continued to shop around cautiously to make certain that their spending dollar would bring the most for the money.

Shoe production, in general, was maintained at almost the same level as in 1948. There were fluctuations in the women's shoe category but only to the extent of shifts from one type of shoe to another. Casual shoes were popular among women because of their comfort and moderate price. Of the estimated 201,000,000 pairs of women's shoes manufactured in 1949, 65,400,000 were casuals.

Men's shoe production remained stable, amounting to an estimated 98,900,000 pairs for 1949 as compared with 104,730,000 pairs in 1948. Juvenile shoe production decreased from the high of 111,194,000 pairs in 1948 to an estimated 104,500,000 pairs for 1949.

Production costs remained high and were reflected in the final cost of the shoe. Devaluation of the British pound sterling and the currencies in other countries came too late in the calendar year to have any appreciable effect on the aggregate cost of making leather. Raw materials provide the bulk of tanners' supplies and, since domestic hides were in short supply, fluctuations in price were negligible.

Shoe manufacturers abroad worked hard to increase their shoe production, with a view to expanding their markets in the United States. English men's shoes always had a good acceptance in the U.S. and the lower prices, as a result of devaluation, were expected to make them more attractive to U.S. purchasers.

Canadian shoe manufacturers were faced with increased production costs as a result of monetary devaluation and gave serious consideration to a price policy that would protect the industry from loss and, at the same time, make Canadian-made shoes available to the public at the lowest possible price, without interfering with standards of quality. (*See* also LEATHER.)

(E. G. An.)

Comparative Statistics of U.S. Shoemaking

		Women's	Men's	Misses' and Children's	Youths' and Boys'	Infants'	All Other	Total
	Production of Shoes by Major Types (000's omitted)							
1948	All Leather	176,512	104,401	54,445	17,173	35,791	21,512	409,834
	Other	20,861	329	1,659	75	2,051	27,473	52,448
	Total	197,373	104,730	56,104	17,248	37,842	48,985	462,282
*1949	All Leather	172,300	98,560	50,200	17,285	33,100	23,000	394,445
	Other	28,700	340	2,700	15	1,200	34,600	67,555
	Other	201,000	98,900	52,900	17,300	34,300	57,600	462,000
	Per Capita Production of Shoes by Major Types (Pairs per Capita)							
1948	All Leather	3.36	2.00	4.29	1.17	2.56	0.15	2.80
	Other	0.40	0.01	0.13	...	0.14	0.19	0.36
	Total	3.76	2.01	4.42	1.17	2.70	0.34	3.16
*1949	All Leather	3.27	1.88	3.77	1.13	2.23	0.16	2.66
	Other	0.54	0.01	0.20	...	0.08	0.23	0.45
	Total	3.81	1.89	3.97	1.13	2.31	0.39	3.11
	Estimated per Capita Consumption of Shoes by Major Types (Pairs per Capita)							
1948	All Leather	3.31	1.91	4.05	1.15	2.36	0.14	2.70
	Other	0.38	0.01	0.12	...	0.14	0.18	0.34
	Total	3.69	1.92	4.17	1.15	2.50	0.32	3.04
*1949	All Leather	3.22	1.86	3.76	1.10	2.36	0.15	2.63
	Other	0.51	0.01	0.19	...	0.06	0.20	0.41
	Total	3.73	1.87	3.95	1.10	2.42	0.35	3.04
	Estimated Consumption of Shoes by Major Types (000's omitted)							
1948	All Leather	174,000	99,700	51,500	16,925	33,000	20,000	395,125
	Other	20,000	300	1,500	75	2,000	26,000	49,875
	Total	194,000	100,000	53,000	17,000	35,000	46,000	445,000
*1949	All Leather	170,000	97,700	50,000	16,700	35,000	22,000	391,400
	Other	27,000	300	2,500	...	1,000	30,000	60,800
	Total	197,000	98,000	52,500	16,700	36,000	52,000	452,200

*Preliminary.

Shooting.

Trapshooting.—The 50th Grand American handicap at Vandalia, O., in Aug. 1949 drew more than 2,000 marksmen from the United States, Cuba, Canada and the Canal Zone. The championship went to Pete Donat, a farmer from Antwerp, O., who defeated I. W. Sonderman of Lima, O., 23–21, in a shoot-off after they had tied with 100 straight from the 20-yd. line. Splitting the money prizes, each won about $7,000.

Mrs. Janice Mason of Dallas, Tex., scored 96 out of 100 from 18 yds. to capture the women's Grand American title. Other champions in 1949 included: Rudy Etchen of Los Angeles, Calif., professional; Joe Hiestand of Hillsboro, O., class AA and champion of champions; D. Lee Braun of Dallas, Tex., professional class AA; Mercer Tennille of Shreveport, La., national doubles winner for the third time in four years; Joan Pflueger of North Miami, Fla., women's champion of champions; and Forest McNeir of Houston, Tex., veterans' champion.

In the national amateur championships held at the New York Athletic club's Travers Island traps, Pelham Manor, N.Y., M. D. Clark of Woodbury, Conn., scored a perfect 25 in a shoot-off with C. L. Banks of Nichols, Conn., for the top prize in the distance handicap. Ben Higginson of Newburgh, N.Y., won the 200-target singles; Roger Fawcett of Greenwich, Conn., the doubles; Forest McNeir of Houston, Tex., the veterans'; Mrs. I. Andrews of Spartansburg, S.C., the women's crown; and Richard Baldwin of Danbury, Conn., the junior championship.

Skeet Shooting.—Sgt. Glen Van Buren of Carswell air force base at Fort Worth, Tex., retained his national all-gauge and service titles in the United States skeet tournament at Dallas, Tex. Other major winners were Mrs. Ann Martin, San Antonio, Tex., women's all-gauge; Ben Di Iorio, Jr., Utica, N.Y., sub-small gauge and champion of champions; Mrs. J. A. La-fore, Haverford, Pa., women's sub-small gauge, and D. L. Braun of Dallas, industry all-gauge. Tom Spicola, 3d, of the University of Tampa, won the 1949 national intercollegiate championship.

Rifle Shooting.—The Dewar rifle trophy was retained by the United States and Robert E. McMains of Dallas, Tex., led a big field for the national championship. W. G. Eicke of George Washington university, Washington, D.C., with an all-time record of 290 out of a possible 300 points, took the individual intercollegiate title, the team crown being won by the University of Maryland, Baltimore.

Pistol Shooting.—Sgt. Huelet L. Benner of Fort Knox, Ky., regained the national pistol championship he had won in 1947. The 18th annual international pistol tourney at Teaneck, N.J., drew a crack field. Among the outstanding marksmen was Sgt. T. R. Mitchell of the U.S. marine corps, who shot three perfect 300s in the four-man team, .45-calibre and .28-calibre contests.

(T. V. H.)

Shows, Animal.

Horses.—Greater interest in horse shows, both from exhibitor and audience viewpoints, was shown in 1949. The 11th annual Tennessee Walking Horse National celebration was reported as the largest ever held. The Tennessee state fair was said to have had its best horse show in 20 yr. The American Royal reported steady growth and progress with 850 horses entered from 37 states. The Southwestern Exposition and Fat Stock show had the largest horse show in its 53-yr. history with more than 900 entries.

A slight reduction in the total number of smaller local shows was noted, but the larger shows reported a banner year.

The hunt clubs in the eastern section of the United States also reported a most satisfactory year.

Increased interest in the Shetland pony, Arabian and Appaloosa shows was reported from certain sections. Likewise, the National Golden Horse show was most successful, bringing together a large number of Palominos of various breeds.

Performance classes for stock horses continued to be especially popular. The cutting horse contest at the Southwestern Exposition and Fat Stock show was the largest of its kind ever held. These performance classes for stock horses had become an accepted event in horse shows over a major portion of the United States.

Other prominent events were the shows at San Diego, Calif.; Tulsa, Okla.; Chicago, Ill.; Houston, Tex.; New Orleans, La.; St. Louis, Mo.; Lexington, Ky.; Denver, Colo.; and The Royal Winter fair at Toronto, Ont. (D. W. Ws.; W. M. Wn.)

Livestock.—The 1949 livestock show year reached new high levels in the average quality and quantity of farm animal breeds at nearly all of the major shows and expositions.

The National Western Stock show, held in Denver, Colo., Jan. 14 to 22, 1949, was distinguished for its purebred Hereford cattle, purebred bulls of both the Hereford and Aberdeen-Angus breeds and commercial feeder cattle. It also presented one of the year's best exhibitions of quarter horses and Palominos.

The Southwestern Exposition and Fat Stock show, oldest established stock show in the United States, was held at Ft. Worth, Tex., from Jan. 28 to Feb. 6, in the new Will Rogers Memorial Amphitheatre and adjoining exhibition barns and buildings.

The Wisconsin state fair, held Aug. 20 to 28, 1949, had the largest number of dairy cattle exhibitions of any show in the country. The Illinois, Indiana, Ohio, Iowa and Minnesota state fairs were all notable for their large shows of sheep and swine. A National Barrow show of all the swine breeds, featuring meat yielding animals only, was held in Austin, Minn., Sept. 14 to 17.

SPANIELS being judged at one of the 41 rings of the Morris and Essex outdoor dog show held at Madison, N.J., May 28, 1949

Various sectional livestock shows were held during the year, the first of which was the Eastern States exposition in Springfield, Mass., Sept. 18 to 24. The next was the Ak-Sar-Ben Livestock and Horse show at Omaha, Neb., Sept. 30 to Oct. 9, chiefly a fat stock show. Closely following was the Pacific International Live Stock exposition at Portland, Ore., Oct. 7 to 15, the major show of the northwest.

The dairy breeds and Belgian draught horses are emphasized annually at the National Dairy Cattle Congress and National Belgian Horse show at Waterloo, Ia. It was held Oct. 3 to 9, 1949; and 1949 saw the introduction of a new dairy show at Indianapolis, Ind., the International Dairy exposition, Oct. 8 to 15.

The annual American Royal Live Stock show at Kansas City, Mo., took place Oct. 15 to 22, 1949. It is perennially among the top beef cattle and horse shows of the United States. San Francisco was host to the Grand National Live Stock exposition Oct. 28 to Nov. 6. The largest stock show of the west coast was held in the new Cow Palace at the outskirts of the city.

The country's largest and most famous livestock show, the International Live Stock Exposition and Horse show, held its 50th anniversary show in the International Amphitheatre and adjoining area of the Chicago Union Stock Yards, Nov. 26 to Dec. 3. Held in Chicago at the same time were the National 4-H Club congress and many annual meetings of national livestock and agricultural associations.

The Calgary Exhibition and Stampede was held July 11 to 16; and the third postwar Canadian National exhibition was held in Toronto Aug. 26 to Sept. 10. Canada's major annual show, the Royal Winter fair, was also held in Toronto, Nov. 15 to 23.

The largest show in South America is the Palermo in Buenos Aires, Arg. It was held in Aug. 1949. It presented the world's largest show of Shorthorn cattle, and, to a lesser extent, featured Hereford and Aberdeen-Angus cattle as well as the two leading dairy breeds of the Argentine, Holstein-Friesians and Guernseys.

The 110th show of the Highland and Agricultural Society of Scotland was held June 21 to 24, 1949, at Dundee; and the century-old Royal Agricultural Society of England show was held July 1949 at Shrewsbury. Both are itinerant shows and the longest established of the world's major events of this class.

(W. E. O.)

Dogs.—Exhibition activity in dogs continued at a high level in 1949. The American Kennel club held under its rules 557 championship point shows of which 331 were for all breeds and 226 were specialty or one breed shows. There were approximately 300 informal sanctioned or match shows, most of them for puppies only—dogs under 12 months of age.

The largest dog show was the one-day outdoor show of the Morris and Essex Kennel club, Madison, N.J., 2,257 dogs actually competing. The best dog in the show was Mrs. Constance Winant's imported Scottish terrier Champion Walsing Winning Trick of Edgerstoune. The largest indoor show was the New York city show, at Madison Square Garden, of the Westminster Kennel club, with 2,046 dogs competing. The top winner was Mr. and Mrs. John P. Wagner's boxer Champion Mazelaine's Zazarac Brandy who at the end of the year had amassed a total of 42 wins of best-in-show all breeds for his career and a record in his breed.

Approximately 862 field trials were held during the year, including 327 bird dog trials (setters, pointers, Brittany spaniels); 230 beagle trials (on rabbits); 55 spaniel trials, mostly for springers but also including cockers—land work on pheasants or pigeons and water work on ducks; 60 retriever trials for retriever breeds including Irish water spaniels—land and water work as with springers. Approximately 180 foxhound and coonhound trials were held, as well as 10 greyhound trials (coursing after live rabbits in an enclosure).

The champion field retriever for the year was Paul Bakewell's black Labrador Marvedel Black Gum. The field champion of the year in springers was Davellis Kennel's Davellis Wager.

Among the bird dogs, the pheasant championship was won by Otis Carpenter's pointer Sam's Madison Jake. The quail championship was won by Powel Briscoe's pointer Briscoe's Carolina Doughgirl. The grouse championship was won by the English setter Sam R. Light's Sam L's Skyhigh.

Total 1949 registrations in the chief studbook, that of the American Kennel club, were 241,811, a new record, with the first ten breeds in order as follows: American cocker spaniel, beagle, collie, boxer, Boston terrier, dachshund, Pekingese, Chihuahua, German shepherd dog, Pomeranian.

(W. Ju.)

Siam: *see* THAILAND.

Sierra Leone: *see* BRITISH WEST AFRICA.

Silk. The bright prospects for increased consumption of silk in the United States in 1949, based on the great increase in 1948 over the year before, did not materialize. Prices of raw silk were stabilized, and there was apparently little incentive for purchasing, evidenced by the small demand for silk fabrics. However, in June, the U.S. occupation authorities in Japan announced that raw silk transactions would be restored to private trading on and after Jan. 1, 1950. In the expectation that silk prices would advance after that date, exports of raw silk from Japan gained momentum in the last four months of 1949. This trend resulted in a very uneven year of consumption by the U.S. silk manufacturers. The total for the year was 36,551 bales, compared with 59,397 bales in 1948. However, much of this came from stocks already in New York. Actual imports from Japan fell sharply to 29,690 bales, compared with 71,239 bales in 1948.

In November, west Germany completed a trade agreement with Japan for the purchase of $1,800,000 in raw silk and silk fabrics.

In the domestic production of silk fabrics, U.S. mills decreased their yardage in about the same proportion as they did with respect to rayons, most of which were made in the same or similar mills. The total production was estimated to be 17,000,000 linear yards, compared with 19,000,000 yd. in 1948 and 69,000,000 yd. in 1939. In addition to the all-silk fabrics, there were increasing reports of anticipated production of mixed nylon-and-silk fabrics, and it was expected that 1950 would see substantial quantities produced, especially for use in underwear and blouses. Meanwhile, the smaller mills manufacturing silk fabrics in the United States were protesting bitterly over competition with Japanese fabrics. Throughout 1949, protests were filed with U.S. army officials in charge of Japanese affairs, with congressional representatives and with the U.S. tariff commission, culminating in the announcement by the tariff commission at the close of the year that a preliminary investigation would be undertaken to determine whether there was justification for an increased rate of duty on silk fabrics to protect the domestic industry.

Of a total of 31,300,000 yd. of all-silk fabrics imported by the U.S. in 1949 from January through November, 29,400,000 yd. came from Japan. The average price per yard was 54 cents from all countries, and 52 cents from Japan. These were all finished fabrics, ready for manufacture into garments or accessories. In November, U.S. silk fabrics, unfinished, were being sold at 97½ cents to $1 a yard. To this would have to be added finishing costs. By the close of the year, prices on Japanese goods were declining to such an extent that officials of S.C.A.P. (Supreme Commander for the Allied Powers) reminded Japanese merchants that if prices went below $5.50 per pound, U.S. tariff rates would be 55% instead of 25%.

Despite these adverse situations, 1949 saw progress in international co-operation in the furtherance of the use of silk. In March, representing the International Silk bureau (later in the year renamed the International Silk association), Aristide Potton of Lyon, Fr., visited Japan for the purpose of asking financial support from Japanese raw silk producers, through U.S. occupation officials, for the promotion of silk throughout the world. A levy of five cents per pound was suggested. The occupation officials, however, as well as Japanese raw silk producers, opposed the suggestion on the grounds that the Japanese economy made collection of such a levy impossible, and that it would have the same effect as raising the price of raw silk, which would counteract against increased use of silk.

Late in May, at Zurich, Switz., 16 countries, including Japan, were represented at the organization meeting of the International Silk association, and plans were made for holding the second International Silk congress in New York city in Oct. 1950. In addition to the United States, represented by 15 delegates, the representatives came from Austria, Belgium, Egypt, France, Germany, Great Britain, the Netherlands, Hungary, Italy, Iran, Japan, Spain, Switzerland, Syria and Turkey. (*See* also RAYON AND OTHER SYNTHETIC FIBRES; TEXTILE INDUSTRY.)

(I. L. Bl.)

Silver. World silver production was gradually working back toward the prewar levels. Outputs of the more important producing countries and the estimated world totals during the past several years are shown in Table I.

Table I.—*World Silver Production*

(In millions of fine ounces, smelter output)

	1942	1943	1944	1945	1946	1947	1948
United States . .	55.86	40.79	35.65	29.05	21.10	38.58	39.23
Canada	20.70	17.35	13.63	12.94	12.54	12.50	14.57
Newfoundland. .	1.11	1.26	1.16	1.08	1.11	0.96	0.88
Mexico.	84.86	76.63	65.46	61.10	43.26	58.84	57.52
Honduras. . . .	3.48	3.16	3.12	3.00	2.68	2.41	3.17
Argentina. . . .	2.84	2.32	1.70	2.76	3.09	2.44	1.20
Bolivia	8.12	7.30	6.80	6.68	6.11	6.23	7.56
Chile.	1.32	1.09	1.09	1.03	0.87	0.98	0.99
Peru	16.04	14.66	15.83	13.00	12.33	11.39	10.42
Belgian Congo. .	3.96	3.11	2.61	4.14	5.05	4.06	3.81
South Africa. . .	1.48	1.33	1.21	1.24	1.20	1.15	1.17
Australia	14.24	10.33	9.37	8.08	9.05	9.53	10.06
Total.	250	205	181	157	133	166	171

Table II.—*Silver Industry in the United States*

(In thousands of fine ounces or of dollars)

	1943	1944	1945	1946	1947	1948
Mine production . .	41,461	34,474	29,024	22,914	35,824	38,096
Imports	$27,903	$23,373	$27,278	$57,578	$68,140	$70,884
Exports	$30,687	$126,915	$90,937	$36,455	$30,649	$12,400
Industrial use. . . .	162,113	176,289	184,661	123,647	126,366	129,186
Secondary recovery .	44,113	56,189	58,361	36,647	27,866	23,897
Net consumption. . .	118,000	120,100	126,300	87,000	98,500	105,289

The countries listed account for about 85% of the total; although there are a large number of minor producers, the U.S.S.R. being the most important of these.

United States.—The salient features of the silver industry in the United States are shown in Table II, as reported by the U.S. bureau of mines.

The improvement in output that was manifested in 1948 was not sustained in 1949, as the total mine output for the first three quarters of 1949 was only 26,829,754 oz.

Canada.—Mine output of silver rose from 12,504,018 oz. in 1947 to 14,569,280 oz. in 1948, and to 11,116,642 oz. through Aug. 1949, against 10,780,518 oz. in the same period of 1948. (*See* also MINERAL AND METAL PRODUCTION AND PRICES.)

(G. A. Ro.)

Singapore: *see* MALAYA (FEDERATION OF) AND SINGAPORE.

Sinkiang: *see* CHINA.

Skating: *see* ICE SKATING.

Skiing.

Members of a French national team made a near sweep of honors in the North American championships held in 1949 at Aspen, Colo. After Jean Pazzi had captured the downhill race on opening day, Georges Panisset won the slalom to defeat Pazzi for the combined crown. Defending champion Jack Reddish of Salt Lake City, Utah, finished third in the downhill and fourth in the slalom to place third in scoring for the combined championship.

Mrs. Rhoda Wurtele Eaves of Montreal prevented a sweep by the French visitors by winning the women's downhill race. However, combined honours were carried home by Mrs. Lucienne Couttet Schmidt, only feminine member of the French team, when she won the slalom after being second to Mrs. Eaves in the downhill dash.

At Salt Lake City, Petter Hugsted, 1948 Olympic champion from Norway, soared to the class A title with leaps of 262 and 263 ft. Second to Hugsted, who represented the Norge Ski club of Chicago, was Art Devlin of Lake Placid, N.Y., who made jumps of 257 and 264 ft. Hugsted was awarded 237 points and Devlin 233.8. George Thrane, a Norwegian exchange student at Washington State college, tallied 230.8; Sverre Kongsgaard, Norwegian student at the University of Idaho, 229.2, and Art Tokle of the Norway Ski club and 1948 winner, 227.6.

Bill Olson of Eau Claire, Wis., with jumps of 244 and 245 ft., captured the class B crown and Marvin Crawford of Steamboat Springs, Colo., placed first in class C after leaping 221 and 226 ft. Howard Jansen of Chicago took the veterans' title.

The national downhill-slalom contests at Big Mountain, Mont., drew a big field of stars, with George Macomber, 21-year-old amateur from West Newtown, Mass., taking the combined laurels with 253 points as a result of a win in the slalom and second place in the downhill contest. Barney McLean of Denver, Colo., was runner-up in the combined scoring with 249 points. The U.S. open downhill championship went to Yves Latreille, 25-year-old Canadian, representing the Sun Valley (Idaho) Ski club.

The big prize for women contestants was taken by Miss Andrea Mead of Rutland, Vt., who took firsts in the downhill and slalom for a combined score of 191 points, four more than her closest rival, Mrs. Rhona Wurtele Gillis of Whitefish, Mont.

Other national title winners in 1949 were Hans Holaas of Modesto, Calif., cross-country; Ralph Townsend, New Hampshire, combined cross-country and jump; Dave Lawrence, Dartmouth college, giant slalom, and Miss Katy Rudolph, Sun Valley, women's giant slalom.

Dartmouth and Middlebury proved outstanding in intercollegiate circles. Numbered among Dartmouth's feats were triumphs in its own and the McGill University Winter carnival. Middlebury won its own carnival after annexing the national college tests at Aspen, Colo. Crosby Perry-Smith of Western State college took both the cross-country and jumping titles, but his team placed second for the meet, scoring 392.22 points as against 394.47 for Middlebury. (T. V. H.)

Skin Diseases: *see* DERMATOLOGY.

Sloan Foundation, Inc., The Alfred P.: *see* SOCIETIES AND ASSOCIATIONS.

Smithsonian Institution.

This institution, located on the Mall in Washington, D.C., was established in 1846 through a bequest from James Smithson, an English scientist. Its purpose is "the increase and diffusion of knowledge among men"; this is carried out by means of scientific researches and explorations, publications and museum and art gallery exhibits. The institution is governed by a board of regents, composed of the vice-president of the United States, the chief justice, three senators, three representatives and six citizens from various parts of the country. The executive officer is the secretary, who in 1949 was Alexander Wetmore. The institution has 10 branches: United States National museum, National Gallery of Art, National Collection of Fine Arts, Freer Gallery of Art, Bureau of American Ethnology, International Exchange service, National Zoological park, Astrophysical observatory, National Air museum and Canal Zone biological area.

Fundamental researches were carried on during 1949 by the institution and its branches, chiefly in the sciences of biology, geology, anthropology and astrophysics. Field expeditions were sent out to many parts of the world in the furtherance of these investigations.

Accessions to the National museum during the year totalled 461,000 specimens, bringing the number of catalogue entries to 31,679,046. Museum field expeditions visited Arnhem Land in Australia, India and Nepal, New Zealand, the Persian gulf, several countries of South and Central America and many states in the United States.

The Bureau of American Ethnology conducted archaeological field work in Panamá and in the Canadian arctic. Its ethnologists worked among the Abnaki Indians of Maine and the Iroquois of New York state. The River Basin surveys, a unit of the bureau, was making a reconnaissance of the Indian sites that were to be flooded by dam construction in numerous river basins of the United States. Of the 2,000 such sites already located, about 450 had been selected for excavation before the valuable archaeological material in them was lost forever. The Institute of Social Anthropology, another unit of the bureau, continued its teaching and field work in co-operation with local organizations in Brazil, Mexico, Colombia and Peru.

The Smithsonian Astrophysical observatory continued its daily measurements of the sun's radiation at its two solar observing stations on Mount Montezuma, Chile, and Table mountain, California. A third station was to be built on Clark mountain, California, as soon as funds were available. In the observatory's division of radiation and organisms, laboratories and apparatus were being prepared for special studies in the fields of photosynthesis and cell growth.

The National Gallery of Art added 1,174 art works to its collections; visitors to the gallery numbered 1,529,568. The National Collection of Fine Arts acquired a number of valuable paintings, and the Freer Gallery of Art added to its collections choice specimens of oriental art, chiefly Chinese, Arabic, Syrian, Indian, Persian and Turkish. The Freer gallery conducted extensive researches on objects in its unique collection.

The National Air museum acquired the "Swoose," the B-17 bomber that served in the Pacific throughout World War II, Maj. Alford Williams' "Gulfhawk II" and a Japanese baka bomb, or suicide plane, among its 122 accessions.

The International Exchange service handled 840,125 packages of scientific and governmental publications in the official exchange of such material with the rest of the world.

The National Zoological park had a record attendance of 3,346,000 visitors. The animal collection at the end of the year stood at 3,724 mammals, birds and reptiles, representing 755 species.

Among the 71 publications issued during 1949 were two volumes in the series of *Life Histories of North American Birds* by A. C. Bent, and a revised edition of the *National Aircraft Collection Handbook*. (A. Wt.)

Snyder, John Wesley

(1896–), U.S. government official, was born on June 21 in Jonesboro, Ark., attended Vanderbilt university, Nashville, Tenn. (1914–15), joined the army in 1917, and after World War I entered the banking business in Arkansas and Missouri. In 1930 he joined the field service of the comptroller of the currency of the U.S. and served with this office until 1937, when he became head of the St. Louis, Mo., agency of the Reconstruction Finance corporation. During World War II, he helped organize the Defense Plant corporation, an RFC subsidiary, and as its operational vice-president and director administered the agency's commitments of more than $10,000,000,000 to finance war plants. From Jan. 1943 to April 1945, he was vice-president of the First National bank of St. Louis, when he became federal loan administrator. On July 17, 1945, he was appointed director of the Office of War Mobilization and Reconversion. On June 25, 1946, Pres. Harry S. Truman appointed him secretary of the treasury.

In Feb. 1949, in spite of falling prices and what proved to be a brief business recession, Secretary Snyder called for increased taxes, warning of "serious consequences" otherwise. On July 1 he reported that the government had ended its fiscal year 1949 with a budget deficit of $1,800,000,000. Throughout the summer Snyder was active as a U.S. representative in U.S.-British discussions on Britain's dollar crisis. In July he conferred with British government officials in London, and in September, he was chairman of a U.S.-Canadian-British conference in Washington, D.C., on the sterling area's dollar shortage. The devaluation of the British pound was announced soon after.

Soccer.

Interest in soccer in the U.S. during 1949 was stimulated by the visit of teams from other countries, including the Belfast Celtics of Ireland, the Scottish national team, the Newcastle United, the Kamraterna club of Sweden and the Milano 11 of Italy. Newcastle won ten victories in ten starts and Milano was undefeated in six contests. A highlight of the year was the 2–0 triumph of Belfast over the Scots at Randalls Island, N.Y.

The National Challenge cup of the U.S. Soccer Football association was won by the Morgan club of Pittsburgh, Pa., which beat the Philadelphia Nationals 4–3 in the final. The Philadelphia Nationals took the American Soccer league title after a three-way deadlock and also won the Lewis cup. In the final for the National Amateur Challenge cup, Elizabeth, N.J., defeated Zenthoefer of St. Louis, Mo.

SCOTLAND v. ST. LOUIS, in the first of seven exhibition matches played against U.S. soccer teams by a visiting Scottish team in 1949. They defeated St. Louis 6 to 0

Penn State scored 14 victories in 14 games but was held to a 2–2 deadlock by the University of San Francisco in the first Soccer Bowl contest, played at St. Louis, Mo., on Jan. 1, 1950.

Films of 1949.—*Soccer: The Universal Game* (Hollywood—Pan-American Films). (T. V. H.)

Socialism.

The Socialist movement in 1949 gave its primary energies to the mobilization of its forces against both Communist and fascistic attacks on democratic institutions and to the implementation of measures of social reform and social reconstruction.

In the field of international organization, the Committee for International Socialist Conferences, (Comisco), held several meetings during the year. At its late December meeting in London, it denounced the Cominform for "openly fomenting war throughout one-half of the world," and, in all countries except Russia, for treating "national feeling as a criminal heresy." "But for the Russian veto," it maintained, "a disarmed world could now possess an international police force and all atomic developments including the bomb could be under international ownership and control." Internationally, Socialists also served prominently in the councils of the United Nations and in the formation of the International Confederation of Free Trade Unions.

The most important labour or democratic socialist government was still that of Great Britain. The British Labour government, passed legislation during the year for the nationalization of the iron and steel industry, to become effective in Jan. 1951, after the 1950 election.

The Labour party spent much time and thought during the year in preparing for the 1950 election. In its declaration, "Labour Believes in Britain," it declared that production was "higher and unemployment lower than ever before in peacetime"; that the people were healthier, and that Labour during its four years in office had provided housing for 750,000 people. It tentatively proposed in the next five-year period to nationalize water supply, minerals, meat wholesaling and cold storage, sugar-beet production and sugar refining. It hoped to encourage decentralization in the nationalized industries and to develop more "drive, public spirit and scope for individuality from bottom to top," better labour-management relations within the nationalized industries, and a greater voice for the consumer. The party lost many seats in the municipal elections, but retained all Labour seats in by-elections.

On the continent, Norwegian Labour increased its parliamentary representation, as a result of the October elections, from 76 to 85 out of 150 seats, with the Conservatives coming next with 23 seats. The Communists lost their entire representation of 11. Following the elections, Labour Premier Einar Gerhardsen again formed an all-Socialist government, and declared that it would carry out its pledge to investigate the desirability of nationalizing banks and insurance companies, but in no case nationalize these services until after the 1953 elections. The government made progress in the development of its hydroelectric, chemical, aluminum, electrosteel and other plants, enacted a law providing for free dental care for children between 6 and 14, and reported a production nearly 50% greater than in the late '30s.

In Denmark, Sweden and Finland, the Social Democrats remained in control of their respective countries. In Finland, the Social Democratic government was under constant pressure to concede important cabinet posts to the Communist party, and was frequently denounced by Russian Communists for their co-operation with the western countries. In August, the strikes staged by Communists were characterized by Socialists as attempts to lead "Finland down the same road as that taken by Czechoslovakia." Several Communist unions, following the settlement of the strike, were expelled from the Finnish Federation of Labour.

Socialists in Belgium helped precipitate a new election following the controversy with the Christian Social party over King Leopold III's return. As a result of the year's election, in which the Socialist party opposed the king's return, Socialists returned 66 representatives to the lower chamber, as contrasted with 69 in 1947, and 33 representatives in the upper chamber. The Christian Social party won 105 seats, and formed a cabinet which the Socialists refused to join for the first time, with the exception of a few months, in the previous decade.

In the Netherlands, Labour Prime Minister Willem Drees presided over a coalition cabinet composed chiefly of Labour and the Catholic party and gave much attention throughout the year to the task of providing a status of independence to Indonesia.

In France, the Socialists, with a parliamentary representation of 104 out of 619, remained in uneasy alliance with other parts in a coalition government during the year. At the beginning of the year, the Socialist party was represented in the Queuille government by five members. The party convention in July, critical of the government's domestic and foreign policies, declared that their members should remain in the cabinet only if the law freezing wages were rescinded, the educational program strengthened, nationalization measures defended, mass purchasing power increased, and a more liberal policy in Indo-China and Madagascar undertaken. In October, when the finance minister refused the Socialist demand to give a temporary bonus to workers pending wage adjustments, the Socialist ministers resigned, and the Queuille cabinet fell on Oct. 5. After several weeks, on the organization of the Bidault cabinet, Socialists again entered the coalition government, following agreement on a compromise program.

In Italy the Socialists remained divided during the year. The Saragat or so-called right wing of the movement was represented in the De Gasperi cabinet early in the year, but on Oct. 31 the Socialist cabinet members withdrew over differences regarding wage policies and the failure of the government to carry out adequate social and land reforms.

In Germany, Social Democrats under the leadership of Kurt Schumacher, took an active part in the formation of the western German government at Bonn. In the first electoral campaign, Socialists urged socialization of the major industries, credit and banking institutions and insurance companies, land reform, greater equality in financial burdens, a better distribution of refugees, an expanded housing program, an international authority for the Ruhr, and the incorporation of Berlin into the German federal state. In the Aug. 14 elections, the Social Democrats received 29.4% of the votes (6,932,274), and won 131 seats. The Christian Democrats secured 31% (7,357,579), winning 139 seats, and the Communists, 1,360,443, obtaining 15 seats out of a total of 402. Social Democrats refused to enter the coalition government.

In the Austrian parliamentary elections of October, Socialists took second place, winning 67 seats (40% of the total), as compared with 76 in the preceding elections. The largest representation was won by the People's party—77, a drop from 85. The Communists, who campaigned with a small dissident group from the Socialist party, increased their representation from four to five. A new pro-nazi party—the Independent party—won 16 seats. Socialists again joined the coalition government, and Adolf Schaerf, Socialist, became vice-chancellor.

In the Israeli election of representatives to the constituent assembly on Jan. 25, 1949, the Mapai party (Palestine Labour party), moderately socialist in its ideology, won 46 out of 120 seats, and the Mapam (United Labour party), a more radical socialist movement, obtained 19 seats. David Ben-Gurion, a leader of the Mapai, became prime minister, and Chaim Weizmann, president. The Communists elected four representatives.

Socialists suffered defeats in both New Zealand and Australia in 1949. In New Zealand's elections of Nov. 30, the Labour party, in office since 1935, won only 38 out of 80 seats in parliament, a loss of 4, while the National party won 42.

The Australia Labour party, after eight years in office, lost control of parliament in the elections of Dec. 10, electing only 47 representatives in the lower chamber out of 121 as compared with 43 in the 1947 elections out of 75 seats. The party, however, secured the largest vote (1,810,918 to the Liberal party's 1,522,861—46% of the total). A Liberal and Country party coalition was formed; the Labour party, however, kept control of the senate. The new government pledged itself to preserve and extend the social services, although ending a number of the government war controls.

In Japan likewise, the Social Democratic party lost ground, electing only 49 to the diet, out of a total of 466, as compared with nearly three times that number in 1947.

In India, the Socialist party ran numerous candidates in opposition to the Congress party, conducted great demonstrations and made gains in many municipalities.

In Canada, the Coöperative Commonwealth Federation elected 13 representatives out of a total of 262 in the parliamentary elections, a drop from 32. The popular vote, however, remained about the same as in 1946. The C.C.F. government of Saskatchewan, Can., under the leadership of T. C. Douglas, was returned, although with a reduced majority.

In the United States, Socialist mayors were returned to office in South Norwalk and Bridgeport, Conn. Unity negotiations with the Social Democratic federation continued. The party conducted widespread discussions as to whether the party should not seek to function primarily as an educational Socialist organization.

In Latin America, the Socialist movement had an up-hill battle against the dictatorships of many of the Latin American countries. In many instances, their propaganda and electoral activities were strictly limited. (*See* also COMMUNISM; POLIT-

ICAL PARTIES, BRITISH.) (H. W. L.; N. T.)

Socialist Soviet Republics: *see* UNION OF SOVIET SOCIALIST REPUBLICS.

Socialized Medicine: *see* HOSPITALS; PUBLIC HEALTH SERVICES.

Social Security.

The impetus toward rebuilding or strengthening social security programs continued to be evident during 1949. A few countries adopted their first social security programs. Several others issued plans or enacted measures to strengthen their existing systems through co-ordination and unification. There was also a marked increase in negotiations among various countries relative to reciprocity in social security benefits. These negotiations were taking place on a bilateral and regional basis and, in some instances, between countries of different continents. The postwar demand for technical consultations on legislative provisions and administrative problems was intensified. With the virtual completion of its organizational phase, the United Nations shifted its emphasis to the development of programs and services and to technical assistance on social security problems through international, regional and national organizations.

United States.—The year 1949 was marked by record outlays for social insurance benefits and for public assistance. Some of the increase was attributable to the growth in population and number of persons in the labour force and to a rise in unemployment. Part reflected larger expenditure of federal funds for assistance programs, and part represented the normal growth in insurance programs, pre-eminently federal old-age and survivors insurance. The year also registered progress in health and welfare programs providing services rather than individual payments. Services for mothers and children were strengthened and extended to new areas, and new programs for infants and children with special needs were initiated.

Amendments to the Social Security act that became effective in the latter part of 1948 accounted in part for increases that occurred during 1949 in assistance payments as well as in number of persons aided under the programs for needy aged and dependent children. Most states increased payments, although frequently the additional amount was not sufficient to close the gap between payments and living costs. For the country as a whole, the average monthly payment for old-age assistance and aid to the blind was $5 higher in June 1949 than in the previous June, and the average per child receiving aid to dependent children was about $3 higher. Individual states made increases in varying amounts. A few used part of the additional funds to add to the rolls persons eligible for but not receiving assistance. If additional federal funds had not become available, some states would have found it necessary to restrict the scope of the program or reduce payments. The rise in unemployment that began late in 1948 had its most immediate effect on the general assistance programs, financed by states, or states and localities, without federal participation.

Though no social security legislation was enacted by congress, the house committee on ways and means held extensive hearings on needed changes in the programs operating under the Social Security act—the largest segment of the whole social security program in terms of numbers of persons actually or potentially affected. Early in the year the Commission on Organization of the Executive Branch of the Government (the so-called Hoover commission) released its recommendations relating to social security. The need to expand and strengthen social insurance provisions to meet the needs of all groups of the population was also underscored by intensified pressure during the year for various types of health and disability insurance under union-management contracts.

Social Insurance and Related Programs.—Two of the programs under the Social Security act were designed to compensate for some of the income loss resulting when a wage earner reaches retirement age or dies (old-age and survivors insurance) or becomes unemployed through no fault of his own (unemployment insurance).

Federal old-age and survivors insurance covers, in general, workers in industry and commerce. It is financed through contributions of the wage earner and his employer, based on the worker's wages from covered employment. The benefits are also geared to his average taxable earnings. In Nov. 1949, monthly benefits totalling $55,319,000 were paid to more than 2,710,000 persons. More than three-fifths of the beneficiaries were retired workers, their aged wives and dependent children; the rest were widows, children and aged dependent parents of deceased insured workers.

Similar payments were made during the month under other insurance or related programs. Monthly retirement, disability and survivor benefits went to beneficiaries under the railroad retirement program (367,100), veterans programs (3,305,800), and the federal civil-service system (161,600). Retirement and disability pensions went to some 230,000 employees under state and local government plans and to the survivors of about 38,000 such employees who had died.

The disability payments mentioned above were the only public provisions for compensating wage loss caused by permanent disability not work-connected. For temporary disability of non-work-connected origin, public provisions were limited to the temporary disability insurance systems in effect in a few states and in the railroad industry. Rhode Island, California and New Jersey made payments in 1949 to workers covered by the state unemployment insurance law whose unemployment was caused by temporary disability. New York enacted a temporary disability law, with benefits to begin July 1, 1950. Washington enacted a similar law, but the effective date was suspended pending the outcome of a referendum in Nov. 1950.

For work-connected disabilities—accounting for only about 5% of all disabling illnesses and injuries—federal and state workmen's compensation provisions were in effect.

Unemployment insurance under the Social Security act is a state-federal program covering the same type of employment as federal old-age and survivors insurance. The benefits are financed by employer contributions but the federal government bears the cost incurred by each state in administering its program. Benefits are paid to an unemployed worker who qualifies on the basis of his previous employment and for whom suitable job openings cannot be found. The amount of the weekly payment and the length of time the worker can draw benefits are determined by the provisions of the state law. In Nov. 1949 a weekly average of 1,698,000 unemployed workers drew benefits, and the amount disbursed for the month by the state systems totalled $152,170,000.

Protection against wage loss from unemployment was also available to railroad employees under the Railroad Unemployment Insurance act. In November, about $16,840,000 was paid to an average of 219,100 workers (average number in a 14-day period). Throughout the first half of the year, special reconversion benefits for unemployment were also paid to veterans under the Servicemen's Readjustment act, but those provisions expired in July.

Assistance and Welfare.—In Nov. 1949, almost 2,716,000 persons aged 65 or over were receiving old-age assistance, at an average payment of $44.50 during the month. More than 1,486,000 children in 585,400 families were receiving aid to dependent children; the average payment was $29.12 per child and

$73.93 per family. About 92,200 blind persons received assistance, at an average payment of $46.

The figures on average payments applied to the country as a whole. Averages by state would show wide differences reflecting both the ability of states and localities to finance assistance and the standards prevailing in the state. Moreover, since coverage under the insurance programs excluded agricultural labor, the predominantly agricultural states had more assistance recipients in relation to total state population than did the highly industrialized states.

Other needy persons who could not qualify under one of these special assistance programs were cared for by general assistance, financed without federal participation. In November, general assistance payments went to 543,000 cases, at an average payment of $50.57 per case. Since a case might represent a single individual or several persons in a family, the total number of individuals receiving general assistance was considerably larger than the number of cases.

The aggregate amount expended in the month for assistance in all four programs from all sources—federal, state and local—was $195,806,000.

The Social Security act also provided federal grants to states to help them extend and improve state and community services for mothers and children. Of the annual total of $22,000,000 authorized for federal grants, certain portions of which must be matched by states, $11,000,000 was for maternal and child health services, $7,500,000 for services for crippled children and $3,500,000 for child welfare services. (*See* also RELIEF.)

(A. J. A.)

Canada.—The federal government spent $688,900,000 (about one-third of its total revenue) on social services during the 1948–49 fiscal year, of which the bulk was administered by the department of health and welfare ($356,800,000) and the department of veterans' affairs ($251,600,000). By June 1949 total family allowances payments passed the $1,000,000,000 mark, with 5,000,000 children having benefited. At that time the average monthly payment per family ran at $13.93 for 1,787,622 families. Amendments to the Family Allowances act lowered from three years to one year the residence qualification, and removed the decreasing scale originally provided in the allowance paid to more than four children.

The number of old-age pensioners increased from 235,947 in June 1948 to 251,865 in March 1949. The federal Old Age Pensions act was revised to increase the federal contribution from $30 to $40 per pensioner. The number of blind pensioners increased from 8,842 in June 1948 to 9,567 in March 1949. The federal old age and blind pensions legislation was extended to Newfoundland, where the lowering of the eligible age from 75 to 70 years raised the number of pensioners from 3,000 to 10,000.

Unemployment insurance claims in Oct. 1949 stood at 83,525, which was about 100% greater than for Oct. 1948. For the year ending March 1949 the Ontario workmen's compensation board paid out more than $23,710,000, and the provincial government named a royal commission to report on activities. The Saskatchewan government established an unmarried parents division in its child welfare branch. (C. Cy.)

Great Britain.—The national insurance schemes, including that replacing the former workmen's compensation scheme, came into operation on July 5, 1948, and there was no further legislation on the subject in 1949. Like many modern statutes the implementation of the two acts required the making of a large number of regulations by the minister of national insurance. During the year there were some amendments to these regulations.

In the first 12 months of the operation of the new scheme, 10,000,000 claims, involving 40,000,000 separate payments were dealt with at the 987 local offices of the ministry of national insurance. The death grant payable under the act, which was a cash payment varying in amount up to a maximum of £20, to help to meet the expenses connected with the death of an insured person, did not take effect until July 5, 1949. Seven million new claims to sickness benefit were made in the year, about half of which included claims for dependents. Under the former national insurance schemes no payments were made for dependents. There were 800,000 maternity benefit claims. At the end of the period July 5, 1948–July 5, 1949, 4,150,000 men over 65 and women over 60 were receiving national insurance retirement or old-age pensions. About two-thirds of all insured men reaching 65, and about one-half of all insured women reaching 60 after July 5, 1948, continued in regular employment and accordingly qualified for the increments for postponed retirement that would be added to their retirement pension when they eventually did retire and claim the pension. These increments were in effect 1*s.* (2*s.* for married couples) for every six months of postponed retirement and could increase the joint pension of a man and a wife over 60 by 20*s.* to 62*s.* a week.

Four hundred and sixty thousand widows under 60 were receiving widows' benefits. A new arrangement was brought into force during 1949 whereby anyone notifying the death of a married man received from the registrar of deaths a simple leaflet giving details of the national insurance death grant and widows' benefits. In addition to the widows' benefits, guardians' allowances or orphans' pensions were being paid to 10,000 children. Industrial injuries insurance formed another big section of the scheme.

About 750,000 claims were made to industrial injuries benefits during the first year.

In Sept. 1949 changes were made in the application of the main insurance scheme to persons who were being maintained free of charge in a hospital under the national health service scheme or by the ministry of pensions. No reduction of benefit was made normally during the first eight weeks in the hospital, but after that period the benefit was reduced by 5*s.* a week if the patient could be treated as having a dependent, or otherwise by 10*s.* a week. After a year in the hospital no more than 5*s.* was normally payable directly to a person in the hospital unless he was under treatment for respiratory tuberculosis, in which case 10*s.* was payable. The exception related to certain circumstances where the person had a dependent.

The foreign ministers of Belgium, France, Luxembourg, the Netherlands and the United Kingdom signed two important conventions representing a new stage in their collaboration in social matters concerning the five. The first convention, which was closely linked with the network of bilateral agreements on social security already negotiated or in course of negotiations, enabled nationals or those countries to take advantage of any of these bilateral agreements, no matter in which of the five countries they were residing or had resided. The benefits covered by these agreements included benefits provided in case of sickness, invalidity, old age, death, maternity, industrial injuries and prescribed occupational diseases. The second convention was based on the principle that, if a national of any of the five countries, when resident in the territory of any of the other four, required social or medical assistance but was without sufficient resources, he would receive such assistance from the latter country on the same basis as its own nationals.

FILMS OF 1949.—*Charley's March of Time* (British Information Services); *Life With Grandpa* (March of Time, Forum Edition).

(JN. M.)

Social Service: *see* CHILD WELFARE; RELIEF; SOCIAL SECURITY.

Societies and Associations. The following is a selected list of U.S. societies and associations, with date of founding, membership, officers and chief activities during 1949. (*See* also the separate articles on Boy Scouts; Red Cross; Veterans' Organizations; etc.)

Alcoholic Foundation, Inc. (Alcoholics Anonymous).—This organization was founded in 1938 to help the sick alcoholic recover, if he wishes. Membership in 1949 was given as 80,000. Activities generally include mutual aid among persons who have recovered, or are seeking to recover, from alcoholism. Publication: *Alcoholics Anonymous.* Headquarters: P.O. Box 459, New York 17, N.Y.

American Academy of Arts and Letters.—Founded in 1904 to further literature and the arts, the academy and its parent body, the National Institute of Arts and Letters, in 1949 awarded medals and 15 arts and letters grants of $1,000 each, besides holding an exhibition of works by newly elected members and recipients of honours. Membership numbered 50; the publication is a *Yearbook.* Officers (1949–50): Paul Manship, president; Mark Van Doren, secretary; Chauncey Brewster Tinker, chancellor; Deems Taylor, treasurer. Headquarters: 633 W. 155th St., New York 32, N.Y.

American Academy of Political and Social Science.—Founded in 1889, this organization had 15,000 members in 1949 among business and professional persons seriously interested in the discussion of public questions. Activities during the year included the 53d annual meeting, during which the discussion topic was: "World Government: Why? When? How?" Publication: *Annals,* bimonthly. Officers (1949): Ernest Minor Patterson, president; J. P. Lichtenberger, secretary; Charles J. Rhoads, treasurer. Headquarters: 3817 Spruce St., Philadelphia 4, Pa.

American Association for the Advancement of Science.—Founded in 1848 and incorporated in 1872, this nonprofit association aims to further the work of scientists, to make science more effective in advancing human welfare and to increase public understanding of science. Membership in 1949 was about 45,000 in 76 countries. Endowment in 1949 was about $500,000. Publications: *Science,* a weekly journal; *The Scientific Monthly;* and symposium volumes based on programs presented at its meetings. The annual convention was held in New York, N.Y., Dec. 26–31, 1949. Officers (1949): E. C. Stakman, president; Howard A. Meyerhoff, administrative secretary. Headquarters: 1515 Massachusetts Ave. N.W., Washington 5, D.C.

American Association of Law Libraries.—Established in 1906 to develop and increase the usefulness of law libraries, this nonprofit corporation had in 1949 a membership of about 500. Publications: *Index to Legal Periodicals; Law Library Journal.* Funds are received from dues and subscriptions to the publications. Officers (1949): Helen Newman, Library of the Supreme Court of the U.S., Washington, D.C., president; Margaret E. Coonan, Railroad Retirement board, 844 Rush St., Chicago, Ill., secretary.

American Association of University Professors.—Founded in 1915, the association seeks to bring about more effective co-operation among its members, to create means for the authoritative expression of the public opinions of the body of its membership and to make collective action possible. Its membership on Sept. 1, 1949, was 35,565, and activities included an annual meeting devoted to its general aims. Publication: *Bulletin* (quarterly). Officers (1949): Ralph H. Lutz, Stanford university, president; Ralph E. Himstead, general secretary. Headquarters: 1101 Connecticut Ave. N.W., Washington 6, D.C.

American Association of University Women.—Founded in 1881 to unite alumnae of different institutions for the maintenance of high standards of education, the association in 1949 numbered 108,165 members. The 1949 activities included study and public education in the fields of educational international relations, the status of women and the arts. Publications: *Journal* (quarterly); *General Director's Letter* (triennially); handbooks, study guides and bibliographies. Fellowship endowments amounted to $1,041,664.76. Officers (1949): Althea K. Hottel, University of Pennsylvania, president; Kathryn McHale, general director. Headquarters: 1634 I St., N.W., Washington 6, D.C.

American Bankers Association.—Founded in 1875 to promote the general welfare and usefulness of banks and financial institutions, this association in 1949 had a membership of more than 16,400 banks and banking offices, representing 97.6% of the U.S. banks and more than 99% of its banking resources. Activities included educational programs, especially the American Institute of Banking for bank personnel and the Graduate School of Banking for bank officers. During 1949 membership of the A.I.B. rose to more than 89,000, with more than 45,000 bank personnel enrolled in courses offered by 400 chapters and study groups, while the graduate school conducted at Rutgers university was attended by almost 1,000 bank officers. President (1949): F. Raymond Peterson, chairman of the board, First National Bank and Trust company, Paterson, N.J. Headquarters: 12 E. 36th St., New York, N.Y.

American Bar Association.—Founded in 1878 to advance the science of jurisprudence and promote the administration of justice in the U.S., this association had a membership of 41,840 as of Oct. 31, 1949. The year's activities included the presentation of the Ross prize to Ernest Wilkerson for his essay, "What Is the Proper Place and Function of the Lawyer in Society?" Awards of merit were also given the state bar associations of Ohio and Colorado and the local bar associations of Columbus, O., and Beverly Hills, Calif. Publications: *American Bar Association Journal,* a monthly, and an annual volume of reports and proceedings, plus various pamphlets. Officers (1949): Harold J. Gallagher, president; Joseph D. Stecher, secretary, Harold H. Bredell, treasurer. Headquarters: 1140 N. Dearborn St., Chicago 10, Ill.

American Bible Society.—Founded in 1816, the society encourages the wider circulation of the Bible without note or comment and without purpose of profit. During 1949 it aided translators of the Scriptures, especially those working among primitive tribes; published approximately 12,000,000 Scripture volumes in the U.S., Germany, Sweden, Switzerland, Mexico, Brazil, Japan, China, Syria and Siam; distributed approximately 10,000,000 Scripture volumes in 153 languages and in about 40 countries; also distributed 15,000 volumes for the blind. Membership (1949): about 150,000. Publication: *Bible Society Record.* Officers (1949): Eric M. North; Frank H. Mann; Frederick W. Cropp; Robert T. Taylor; Francis C. Stifler; Gilbert Darlington. Headquarters: 450 Park Ave., New York 22, N.Y.

American Chemical Society.—Organized in 1876, the society aims at advancing chemistry in all its branches; promoting research in chemical science and industry; and improving the qualifications and usefulness of chemists and increasing the spread of chemical knowledge. In 1949 the membership of 62,208 was organized in 130 local sections covering most of the U.S., Canada, Hawaii and Puerto Rico; divisions are organized by members with similar technical interests regardless of geographical location. There were 19 divisions in 1949. Publications included: *Analytical Chemistry; Chemical Abstracts; Chemical and Engineering News; Industrial and Engineering Chemistry; Journal of the American Chemical Society; Journal of Physical and Colloid Chemistry; Chemical Reviews; Journal of Chemical Education; Rubber Chemistry and Technology.* Officers (1949): president, Linus Pauling; executive secretary, Alden H. Emery; treasurer, Robert V. Mellefont. Headquarters: 1155 16th St. N.W., Washington 6, D.C.

American College of Dentists.—The college was founded in 1920 to promote the ideals of the dental profession, advance the standards and efficiency of dentistry, stimulate graduate study, reward meritorious achievement by dentists and improve public appreciation of oral health service. Membership in 1949 was about 1,450. Its convocation was held in San Francisco, Calif., Oct. 16, 1949. The *Journal of the American College of Dentists* is issued quarterly. Officers (1949): Earl W. Swinehart, president; P. V. McParland, vice-president; O. W. Brandhorst, secretary; Harold S. Smith, treasurer. Headquarters: 4952 Maryland Ave., St. Louis, Mo.

American College of Life Underwriters.—Founded in 1927 to establish an educational standard for the profession of life underwriters and to encourage formal training for this field, the organization awards qualified candidates a professional certificate of recognition. By the end of 1949, 3,338 persons had been awarded this certificate (C.L.U.), and 88 had been awarded the certificate of proficiency. In June 1949, 2,967 candidates took examinations for the certificate at 148 universities and colleges, and a total of 3,944 examinations were taken during the year. A total of 3,590 persons had completed the five examinations necessary for the certificate, and 5,507 others had credit for one or more of the examinations. Publications: *Annual Announcement; Annual Report;* and brochures. Officers (1949): Julian S. Myrick, chairman of the board; S. S. Huebner, president; Joseph H. Reese, secretary. Headquarters: 3924 Walnut St., Philadelphia 4, Pa.

American College of Surgeons.—Founded in 1913 to elevate the standards of surgery, the organization issues an annual list of approved hospitals, including those approved for graduate training in surgery, for cancer detection and research, and also lists approved medical services in industry. The college in Oct. 1949 was host to the sixth Inter-American Congress of Surgery in Chicago, Ill. Its membership in 1949 was 15,750, and its endowment $1,000,000. Publications: *Surgery, Gynecology and Obstetrics* and a quarterly bulletin. Officers (1949): Frederick A. Coller, president; Donald G. Tollefson and Robert M. Moore, vice-presidents; Paul B. Magnuson, secretary; Warren H. Cole, treasurer. Headquarters: 40 E. Erie St., Chicago 11, Ill.

American Economic Association.—This professional association of economists was founded in 1885 to encourage economic research, especially the historical and statistical study of conditions of industrial life, and to issue publications on and encourage discussion of economic subjects. Membership (1949): 6,400 members and 2,500 library, corporate and individual subscribers. The program of the annual meeting held in New York, N.Y., Dec. 27–30, 1949, covered a variety of subjects, including the problems of an advanced defense economy, population and resources and economic aspects of private enterprise. Publications: *American Economic Review* (quarterly); *Papers and Proceedings.* Officers (1949): Howard S. Ellis, president; James W. Bell, secretary-treasurer. Headquarters: Northwestern university, Evanston, Ill.

American Geographical Society.—This society was founded in 1852 to promote geographical research and exploration and to assemble and disseminate geographical knowledge through its publications and its library. In 1949 the society established a new department of medical geography; continued its long-term program of glacier studies with expeditions to Patagonia, Alaska and the Canadian Rockies; completed, under contract with the army map service, a revision of a number of sheets of its map of Hispanic America in the scale of 1:1,000,000. Publications: *Geographical Review* (quarterly); *Current Geographical Publications* (monthly bibliography). Membership (1949): about 4,500. Officers (1949): Richard Upjohn Light, president; John K. Wright, director. Headquarters: Broadway at 156th St., New York 32, N.Y.

American Historical Association.—Founded in 1884, and incorporated by act of congress in 1889, the association has for its purpose the promotion of historical studies, the collection and preservation of historical manuscripts, and kindred purposes in the interests of U.S. history and history in the U.S. Membership (1949) was 5,200; the association's annual meeting was held in Boston, Mass., Dec. 28–30, 1949. Publications: *American Historical Review: Annual Reports;* and selected historical monographs. Endowment: $279,000, of which $144,000 is restricted. Officers (1949): Conyers Read, University of Pennsylvania, president; Samuel E. Morison, Harvard university, vice-president; Guy Stanton Ford, executive secretary and editor; Solon J. Buck, treasurer. Headquarters: Library of Congress annex, Washington 25, D.C.

American Institute for Property and Liability Underwriters, Inc.—This organization was founded in 1942 to establish an educational standard for its field and to encourage formal training of property and casualty underwriters. The institute holds annual examinations for certification of underwriters, which 316 candidates had passed by the end of 1949. An additional 1,060 persons had credit for one or more of the five examinations, which during the year were held at 97 examination centres located in 39 states, the District of Columbia and Hawaii. Publication: *Announcement,* annual. Officers (1949): S. S. Huebner, chairman of the board of trustees; Charles E. Hodges, president; Arthur C. Goerlich, secretary. Headquarters: 3924 Walnut St., Philadelphia 4, Pa.

American Institute of Accountants.—A national professional society of certified public accountants, founded in 1887 to maintain high standards of education and practice for the profession and to develop the techniques of accounting in the public interest, the American institute had a membership in 1949 of more than 14,000. The year's activities included: continued promotion of improvements in federal income tax and government organization; continued preparation of the uniform C.P.A. examination in use in every state and territory but one; further development of testing programs for accounting students. Publications: *Journal of Accountancy* and *Certified Public Accountant*, both monthly. Officers (1949–50): J. Harold Stewart, president; Warren W. Nissley, treasurer. Headquarters: 270 Madison Ave., New York 17, N.Y.

American Institute of Chemical Engineers.—Founded in 1908 to advance chemical engineering in theory and practice and to maintain a high professional standard among its members, the institute in 1949 had a membership of 9,641. Meetings were held in Los Angeles, Calif., Tulsa, Okla., Montreal, Que., and Pittsburgh, Pa. The publication *Chemical Engineering Progress* is issued monthly. Officers (1949): F. J. Curtis, president; W. L. McCabe, vice-president; S. L. Tyler, secretary; C. R. DeLong, treasurer. Headquarters: 120 East 41st St., New York 17, N.Y.

American Institute of Electrical Engineers.—Founded in 1884 to advance the theory and practice of electrical engineering and of allied arts and sciences, this institute had on Sept. 1, 1949, a membership of 33,380. It had 39 technical committees working in five groups on: communication, industry, science and electronics, general applications and power. Publications: *Electrical Engineering*, a monthly; *Transactions; Standards;* and special publications. Officers (1949): James F. Fairman, president; H. H. Henline, secretary. Headquarters: 33 West 39th St., New York 18, N.Y.

American Institute of Mining and Metallurgical Engineers.—This society was founded in 1871 to promote the arts and sciences connected with the economic production of the useful minerals and metals, and the welfare of those employed in these industries. Membership in 1949 was 15,800, plus 4,500 student associates. In 1949 a new series of monthly journals was instituted: *Mining Engineering; Journal of Metals;* and *Journal of Petroleum Technology;* these replaced former publications. Endowed funds consisted of $830,000. Officers (1949): L. E. Young, president; Edward H. Robie, secretary; Andrew Fletcher, treasurer. Headquarters: 29 West 39th St., New York 18, N.Y.

American Iron and Steel Institute.—This organization was founded in 1908 to provide for mutual exchange of information and experience, to encourage and co-ordinate industry research, compile statistics and promote the use of iron and steel. Activities in 1949 included those of a joint committee to expedite the flow of scrap; joint industry research into 38 phases of iron and steel use; collection of statistics indicating that combined expansion programs of steel companies for 1947–50 aggregated 7,600,000 tons. Membership (1949): 98 company members; 463 associate members; 1,750 active; 58 emeritus; and 6 honorary memberships. Publications: *Steelways*, bimonthly; *Steel Facts; Yearbook; Annual Statistical Report; Directory of Iron and Steel Works;* and others. Officers (1949): Walter S. Tower, president; B. F. Fairless and Frank Purnell, vice-presidents; Harold L. Hughes, treasurer; George S. Rose, secretary. Headquarters: 350 Fifth Ave., New York 1, N.Y.

American Law Institute.—Founded in 1923, the institute seeks the clarification and simplification of the law and its better adaptation for social needs, the better administration of justice and the encouragement of scholarly and scientific legal work. During 1949 tentative approval was given a uniform commercial code, drafted in co-operation with the National Conference of Commissioners on Uniform State Laws. Progress was also made in the continuing legal education program of the institute, conducted in co-operation with the American Bar association, to make available through local bar associations courses and literature on selected phases of the law. Work also advanced on the drafting of new provisions for an amended federal income tax statute. The Institute numbered 1,070 elected and 249 ex-officio members in 1949. Numerous publications deal with specific aspects of the law. Officers (1949): Harrison Tweed, president; William A. Schnader, 1st vice-president; John G. Buchanan, 2nd vice-president; William Dean Embree, treasurer. Herbert F. Goodrich was director. Headquarters: 133 S. 36th St., Philadelphia 4, Pa.

American Mathematical Society.—This society was founded in 1888 to encourage and maintain an active interest in mathematical science. Membership in 1949 included 4,000 individuals and 104 institutions. Publications: *Bulletin of the American Mathematical Society; Transactions of the American Mathematical Society; Mathematical Reviews; Colloquium Publications; Mathematical Surveys.* Officers (1949): J. L. Walsh, president; J. R. Kline, secretary. Headquarters: 531 West 116th St., New York 27, N.Y.

American Society of Civil Engineers.—The society was founded in 1852 for the purpose of advancing the sciences of engineering and architecture. Membership as of Nov. 1949 was 27,240. Professional activities of the society were directed through its headquarters, its professional committees, student chapters in 127 engineering colleges and the 13 following technical divisions: air transport, city planning, construction, engineering economics, highways, hydraulics, irrigation, power, sanitary engineering, soil mechanics and foundations, structural, surveying and mapping, and waterways. Publications: *Proceedings*, monthly; *Transactions*, yearly; *Civil Engineering*, monthly; and a *Yearbook*. Officers (1949): Franklin Thomas, president; (1950) Ernest E. Howard, president; William N. Carey, executive secretary. Headquarters: 33 W. 39th St., New York 18, N.Y.

American Society of Composers, Authors and Publishers (ASCAP).—Founded in 1914 to assure equitable payment of royalties for public performances of copyrighted musical material, the society in 1949 numbered 2,040 composer and author members and about 400 publishers. President for the 1949–50 term was Fred E. Ahlert; vice-presidents were Saul H. Bourne and Otto A. Harbach; secretary was George W. Meyer and treasurer was Louis Bernstein. Headquarters: 30 Rockefeller Plaza, New York, N.Y.

American Society of Mechanical Engineers.—Founded in 1880 to promote the art and science of mechanical engineering and allied arts and sciences, the association's 1949 membership numbered more than 30,000, and its year's activities included four national meetings and conferences of six professional divisions. Publications: *Mechanical Engineering*, monthly; *Journal of Applied Mechanics*, quarterly; *Transactions;* an annual catalogue and directory; and *Applied Mechanics Reviews*, synopsizing world literature in applied mechanics. Officers (1949): James M. Todd, president; Clarence E. Davies, secretary. Headquarters: 29 West 39th St., New York 18, N.Y.

Brookings Institution.—A nonprofit organization founded in 1927 and dedicated to public service through research and education in economics and government, the institution receives income from its own endowments, from annual grants from foundations and from the sale of publications. Its 1949 activities included a conference on university and college teaching of international relations, held at Lake Forest, Ill., in July, and the publication of: *Overseas Information Service of the U.S. Government*, by Charles A. H. Thomson; *Toward Efficient Democracy*, by A. C. Millspaugh; *Federal Employees in War and Peace*, by Frances T. Cahn; *Controlling Factors in Economic Development*, by Harold G. Moulton; *Automotive Transportation* by Wilfred Owen; *National Transportation Policy* by Charles L. Dearing and Wilfred Owen. Officers (1949): Harold G. Moulton, president; Lewis Meriam, vice-president; Elizabeth H. Wilson, secretary. Headquarters: 722 Jackson Place, Washington, D.C.

Buhl Foundation, The.—Established in 1927, the foundation has by 1949 granted to existing or especially established agencies a total of $6,086,181 for the promotion of nationally significant programs in the Pittsburgh district, in the fields of regional economics, historical and social research, higher education and research in the natural sciences. The foundation pioneered in a demonstration of a large-scale planned residential community through its $1,700,000 Chatham Village. It maintains the Buhl Planetarium. Foundation assets in 1949 were $12,649,498. Director (1949): Charles F. Lewis. Headquarters: Farmers Bank building, Pittsburgh 22, Pa.

Carnegie Trusts.—Six autonomous and separately administered agencies in the U.S. were established by Andrew Carnegie for various philanthropic purposes; in addition there are four Carnegie trusts in Great Britain, and Carnegie Hero funds operate in nine European countries.

Carnegie Corporation of New York (1911), with a basic endowment of $135,000,000 and 1949 assets of more than $173,000,000, aims at the advancement and diffusion of knowledge among the people of the U.S. and the British dominions and colonies, its 1949 program stressing support of specific undertakings, especially in the social sciences, in institutions of higher education and in organizations and agencies devoted to general education in national and international affairs. President (1949), Charles Dollard; secretary, Robert M. Lester. Headquarters: 522 Fifth Ave., New York 18, N.Y.

Carnegie Institute of Pittsburgh (1896) includes a department of fine arts, a music hall and a museum of natural history, and to it are closely related the Carnegie Library of Pittsburgh, the Carnegie Library school and the Carnegie Institute of Technology. President (1949), James M. Bovard; secretary, Augustus K. Oliver. Headquarters: 4400 Forbes St., Pittsburgh 13, Pa.

Carnegie Institution of Washington (1902), which in 1949 had assets of more than $40,000,000, conducts fundamental scientific investigation, particularly in astronomy, terrestrial magnetism, plant biology, embryology, genetics and archaeology. President (1949), Vannevar Bush; executive officer, Paul A. Scherer. Headquarters: 1530 P St., N.W., Washington 5, D.C.

Carnegie Hero Fund Commission (1904), with assets in 1949 of about $10,000,000, was established to recognize by medals and monetary awards heroic acts performed in peaceful walks of life. President (1949), Thomas S. Arbuthnot; manager, C. B. Ebersol. Headquarters: Oliver building, Pittsburgh 22, Pa.

Carnegie Foundation for the Advancement of Teaching (1905) was established to provide retiring pensions for teachers and to advance higher education, having received $31,000,000 from Carnegie and substantial additional sums from the Carnegie corporation for a program to improve teaching in southern colleges. President (1949), Oliver C. Carmichael; secretary, Robert M. Lester. Headquarters: 522 Fifth Ave., New York 18, N.Y.

Carnegie Endowment for International Peace (1910) uses the income from its $10,000,000 endowment to further friendly understanding among nations, its aim in 1949 being to support the United Nations by stimulating public education in foreign affairs and by conducting studies and seminars. President (1949), James T. Shotwell; secretary, E. N. Thompson. Headquarters: 405 West 117th St., New York 27, N.Y.

Catholic Community Service, National.—This service organization was founded Nov. 13, 1940, as the agency designated by the Catholic bishops of the U.S. to mobilize and co-ordinate the Catholic resources of the country to serve the spiritual, educational, recreational and welfare needs of men and women in the armed forces, patients in Veterans' administration hospitals and their families. During 1949 the N.C.C.S. conducted programs in 49 activities located near major military establishments in the U.S. and overseas; conducted veterans' programs in 85 Veterans' administration hospitals; and loaned staff members to the president's committee on religion and welfare in the armed forces. Publications: the *NCCS Newsletter*, a house organ; *NCCS-VA Hospital News;* and various pamphlets. The N.C.C.S. receives funds from the United Service organizations, which is a beneficiary of the community chest. Thomas D. Hinton was executive director in 1949. Headquarters: 1312 Massachusetts Ave., N.W., Washington 5, D.C.

Catholic Library Association.—This international organization of librarians, educators and others interested in the promotion of Catholic literature and scholarship was founded in 1936. Its 1949 membership was 1,662 and activities included the 23d annual conference, in Detroit, Mich., observance of Catholic Book Week, and publication of: *Catholic Library World; Catholic Periodical Index; Catholic Supplement to Standard Catalog for High School Libraries; Catholic Supplement to the Children's Catalog; Books for Catholic Colleges; Catholic Booklist, 1949.* John O'Loughlin, librarian, Boston college, was president-elect in 1949; Laurence A. Leavey, Manhattan college, was secretary-treasurer. Headquarters: P.O. Box 25, Kingsbridge Station, New York 63, N.Y.

Catholic Organizations for Youth.—Generally these organizations are organized on diocesan lines, numbering about 120; the central co-ordinating agency is the youth department of the National Catholic Welfare conference, whose director in 1949 was Joseph E. Schieder. In addition to diocesan organizations there were also the National Federation of Catholic College Students, the Newman Club federation, the Columbian Squires, the Junior Catholic Daughters of America and others, all dedicated to the promotion of the spiritual welfare and the intellectual and social development of their members. Diocesan organizations generally planned their programs along the lines of spiritual, cultural, social and athletic activities. The total number of young people reached by these programs was estimated at 5,000,000 or 6,000,000. Publications were issued by various local units, while the youth department of the National Catholic Welfare conference was the centre for national publications.

Catholic Rural Life Conference, National.—Founded in 1923, this organization's aims are to care for underprivileged Catholics living on the land; to help keep Catholics living on the land; and to convert to Catholicism others living on the land. During 1949 the conference urged the overhaul of farm price support systems in the interest of the family-type farmer and called for minimum wage rates for agricultural workers and for standard living conditions for displaced persons resettled on farms. Publication: *Christian Farmer* (monthly). Officers (1949): president, Bishop John P. Treacy, of LaCrosse, Wis.; executive secretary, Msgr. L. G. Ligutti. Headquarters: 3801 Grand Ave., Des Moines, Ia.

Catholic Welfare Conference, National.—Founded in 1919, the aim of this organization is to unify, co-ordinate and organize the Roman Catholics of the U.S. in works of education, social welfare, immigrant aid and other activities. Operating departmentally, the conference's 1949 program included: a survey of secondary education; production of radio programs by the National Council of Catholic Men; collection of more than 1,000,000 pieces of new and worn clothing by the National Council of Catholic Women; formulation of plans for the establishment of a National Catholic Youth council; forwarding by the War Relief Services of a total of 51,036,406 lb. of food, clothing and medicine valued at more than $6,000,000. Publication: *Catholic Action.* Officers (1949): Archbishop John T. McNicholas of Cincinnati, O., chairman; Archbishop Francis P. Keough of Baltimore, Md., vice-chairman; Bishop John M. Gannon of Erie, Pa., treasurer; Bishop John F. Noll of Fort Wayne, Ind., secretary. Headquarters: 1312 Massachusetts Ave., N.W., Washington 5, D.C.

Charles Hayden Foundation.—Established in 1937 through the residuary estate of Charles Hayden, the foundation by Sept. 30, 1949, had contributed $14,588,000 for the founder's purpose: to assist needy boys, especially of the New York and Boston metropolitan areas, and with particular emphasis on boys' clubs, boys' camps and similar projects. On Sept. 30, 1949, there were approximately $53,000,000 in the fund. Officers (1949): J. Willard Hayden, president; Edgar A. Doubleday, executive vice-president; Erle W. Daveler, vice-president. Headquarters: 25 Broad St., New York 4, N.Y.

Commonwealth Fund.—Established in 1918 by Mrs. Stephen V. Harkness "to do something for the welfare of mankind," the fund in 1949 amounted to approximately $50,000,000, and appropriations for the nine months ending June 30, 1949, were $2,135,559.32. Activities tending to promote or maintain health accounted for three-fourths of this total, with emphasis on medical research, experimental health services and public health activities, regional hospital activities, medical education and medical fellowships. Thirty-one men and three women held Commonwealth fund fellowships for 1949–50 for students and civil servants from Great Britain and other parts of the British commonwealth. Five books and one pamphlet were published. There are nine directors, including Malcolm P. Aldrich, president. Headquarters: 41 East 57th St., New York 22, N.Y.

Duke Endowment, The.—This endowment was established as a common-law trust by an indenture executed Dec. 11, 1924, by James B. Duke "to make provision in some measure for the needs of mankind along physical, mental and spiritual lines." The fund allocates payments to four educational institutions—Duke university, Davidson college, Furman university and Johnson C. Smith university—and distributions are also made to support hospitals, orphanages, superannuated Methodist preachers and rural churches. The amount distributed from Dec. 11, 1924, to Dec. 31, 1948, was $74,704,562.96, in addition to a reserve fund and a retained balance that totalled $80,547,951.22 net income earmarked as available for distribution. The fund is supervised by a self-perpetuating board of 15 trustees. Puplication: *The Duke Endowment Year Book.* Officers (1949): George G. Allen, chairman; Alexander H. Sands, Jr., secretary; Walter C. Parker, treasurer. Headquarters: Power building, Charlotte 1, N.C.

Elks, Benevolent and Protective Order Of.—A fraternal order organized in 1868 to practise charity, brotherly love, justice and fidelity; to promote the welfare and enhance the happiness of its members; to quicken the spirit of U.S. patriotism; and to cultivate good fellowship. In 1949 membership in 1,530 lodges was 975,000. Charitable expenditures were almost $6,000,000. A national essay contest was sponsored on the subject, "Why Democracy Works," and fraternal centres were reopened for young men in the armed services. Publication: *Elks Magazine,* monthly. Officers (1949): Emmett T. Anderson of Tacoma, Wash., grand exalted ruler; J. E. Masters of Chicago, Ill., grand secretary. Headquarters: 2750 Lakeview Ave., Chicago 14, Ill.

Falk Foundation, The Maurice and Laura.—Founded in 1929 to advance human welfare, the foundation supports research into basic economic problems. Grants in 1949 totalled $367,000, principally to the Brookings institution, for a survey of medical service in the U.S. and a study of social security costs and financing methods, and to the Alfred P. Sloan Foundation, Inc., to further its motion-picture techniques for presenting economic information. Allotments were also made to the United Jewish fund, the community chest of Allegheny county, Pa., and to the University of Pittsburgh. Publications in 1949: *Economic Systems; Industry-Wide Bargaining; Our National Debt, Its History and Its Meaning Today; The Rising Trend of Government Employment;* and *Controlling Factors in Economic Development.* Funds as of Dec. 31, 1948: $7,664,573.40. Officers (1949): Leon Falk, Jr., chairman; Arthur E. Braun, treasurer; Eugene B. Strassburger, secretary; J. Steele Gow, executive director. Headquarters: 1911 Farmers Bank building, Pittsburgh 22, Pa.

Ford Foundation, The.—Incorporated as a nonprofit corporation under the laws of the state of Michigan on Jan. 15, 1936, to receive and administer funds for scientific, educational and charitable purposes, all for the public welfare, the foundation made contributions during 1949 (as of Oct. 5) of $2,750,000. Assets were approximately $215,000,000. Officers (1949): Henry Ford II, president; B. J. Craig, secretary and treasurer. Headquarters: 2612 Buhl building, Detroit 26, Mich.

Franklin Institute of the State of Pennsylvania.—This nonprofit institution, founded in 1824 for the promotion of the mechanic arts, devotes itself to the interpretation of science for the benefit of nontechnical persons through: the Benjamin Franklin Memorial; the *Journal,* a monthly publication which reports scientific developments; lectures; a library of 131,000 volumes, 46,000 pamphlets and 4,000 maps; a museum of science and industry including a planetarium; research laboratories; and honour awards for distinguished achievements in science and technology. Income is derived from endowments; dues from more than 5,000 members; museum admissions; and research sponsors. Officers (1949): Richard T. Nalle, president; Henry B. Allen, executive vice-president and secretary. Headquarters: 20th St. and Benjamin Franklin Pkwy., Philadelphia 3, Pa.

Future Farmers of America.—The Future Farmers of America, incorporated in 1928, is a national organization of boys studying vocational agriculture in public secondary schools under the provisions of the national vocational education acts; the chief of the Agricultural Education service of the U.S. office of education is chairman of an adult national advisory council. The organization's purpose is to develop competent, aggressive, rural and agricultural leadership; to improve techniques of farming; and generally to develop scientific farm programs. Activities during 1949 included the conduct of dairy-cattle-, dairy-product- and poultry-judging contests at Waterloo, Ia., Oct. 4–6; livestock and meat judging at Kansas City, Mo., Oct. 13–15; national F.F.A. convention at Kansas City, Oct. 10–13; and national F.F.A. week, held annually during the week of George Washington's birthday. Membership in 1949 was 280,111. Officers (1949): Doyle Conner, Starke, Fla., president; A. W. Tenney, Office of Education, Washington, D.C., executive secretary. Headquarters: Office of Education, Washington 25, D.C.

Georgia Warm Springs Foundation.—Founded by Franklin D. Roosevelt in 1927 for the study and treatment of the aftereffects of poliomyelitis and for the spread of medical knowledge in this field, the foundation conducts a hospital at Warm Springs, Ga., to which patients are admitted only after the disease has passed the acute stage. Almost 900 patients were treated during 1949. The foundation's activities are financed primarily by grants from the National Foundation for Infantile Paralysis. Officers (1949): Basil O'Connor, president and treasurer; William F. Snyder, vice-president and secretary; Raymond H. Taylor, executive secretary; and C. E. Irwin, medical director and chief surgeon. Headquarters: 120 Broadway, New York 5, N.Y.

Guggenheim Memorial Foundation, John Simon.—The foundation was established in 1925 to improve the quality of education and the practice of the arts and professions, to foster research and to provide for the cause of better international understanding. During 1949 it awarded fellowships to 138 applicants from the U.S., 5 from Canada and 22 from Latin American countries. Officers (1949): Mrs. Simon Guggenheim, president; Francis H. Brownell, vice-president; Henry Allen Moe, secretary; Otto L. Myers, treasurer. Headquarters: 551 Fifth Ave., New York 17, N.Y.

International College of Surgeons.—Founded in 1935, this association aims to create a common bond among surgeons of all nations. Membership in 1949 was reported as 6,000. Publication: *Journal of the International College of Surgeons,* bimonthly. During 1949 an international postgraduate exchange and information bureau was established. Officers (1949): Francisco Graña, Lima, Peru, president; Max Thorek, Chicago, Ill., international secretary-general. Headquarters: 1516 Lake Shore drive, Chicago, Ill.

Jewish Welfare Board, National.—This organization was founded in 1913 to serve as a national association of Jewish community centres and Young Men's and Young Women's Hebrew associations; to sponsor co-ordinated national cultural projects, such as the Jewish Book Council of America, National Jewish Youth conference, etc.; and to serve as a government-recognized agency for meeting the religious, welfare and morale needs of Jewish personnel of the armed forces and in Veterans' administration hospitals. Membership in 1949 included 321 affiliated Jewish community centres with 500,000 members and 41 affiliated national Jewish organizations. Publications: *JWB Circle; Jewish Music Notes; In Jewish Bookland; Women's Division Bulletin; Jewish Center Program Aids.* Officers (1949): Frank L. Weil, president; Joseph Rosenzweig, secretary; S. D. Gershovitz, executive director. Headquarters: 145 E. 32d St., New York 16, N.Y.

Kellogg Foundation.—Founded in 1930, the W. K. Kellogg foundation had as its goal the promotion of the health, education and welfare of mankind, principally of children and youth, without regard to race, sex, creed or nationality. Its continuing program includes the making of grants to established organizations for the conduct of their activities in the fields of medicine, dentistry, general education, public health, hospital work and nursing. Funds in 1949 amounted to $31,970,000, received chiefly from W. K. Kellogg, chairman of the board of trustees. Publications: *W. K. Kellogg Foundation—The First 11 Years* (now out of print); *Medical Diagnostic Services for Small Communities* (1949). Officers (1949): Emory W. Morris, president and general director; Glenn A. Cross, vice-president and assistant treasurer; Bessie Rogers Young, secretary and treasurer. Headquarters: 250 Champion St., Battle Creek, Mich.

Kiwanis International.—This fraternal organization was founded in 1915, and its constituent local clubs include representative business and professional men. Membership in 1949 numbered 200,000 in more than 3,000 clubs. Activities included raising of nearly $18,000,000 for community chest and other welfare drives, provision of recreational opportunities for 1,650,000 young people and assistance of 7,500 juvenile delinquents. More than 8,000 campaigns were conducted in behalf of safety, universal voting, increased church attendance and the prevention of traffic congestion. Publications: *Kiwanis Magazine* and intraorganization publications. Officers (1949): J. Hugh Jackson, president; Lee F. Campbell, treasurer;

D. E. Peterson, secretary. Headquarters: 520 North Michigan Ave., Chicago 11, Ill.

Knights of Columbus.—Founded in 1882, this organization's goal is to render financial aid to members and their beneficiaries; to render assistance to sick and disabled members; and to promote educational, char-table, religious, social, war relief and public relief work. During 1949 t continued its program of disseminating information on Roman Catholic tenets through newspaper advertising and made available without charge to radio stations a third series of recordings on "The Preservation and Promotion of American Ideals." Thirty-three new circles of the order's boys' society, the Columbian Squires, were organized during 1948–49; 184 K. of C. councils established discussion groups. Membership during 1949: 763,451; publication: *Columbia* (monthly). John E. Swift was supreme knight. Headquarters: 45 Wall St., New Haven 7, Conn.

League of Women Voters of the United States.—Founded in 1920 to encourage the participation of citizens in government, this organization had 89,000 members in 1949. During the year it emphasized support of the United Nations, conducted fiscal studies so that it could support measures making for a stable national economy and laid plans to stimu-ate citizens to become active workers in the political party of their choice, with special emphasis on the nomination of candidates. State and ocal activities stressed improvement of state constitutions and tax systems and better schools. Publications: *Action*, members' quarterly magazine, and *Trends*, biweekly, following developments in legislation. Miss Anna Lord Strauss was president in 1949. Headquarters: 726 Jackson Pl., N.W., Washington 6, D.C.

Lions Clubs, The International Association of.—Founded in 1917, this association of 385,000 members in 7,725 Lions clubs in 26 countries has its objectives the promotion of international good will, good government and good citizenship, civic betterment, promotion of good fellowship and provision of a forum for full discussion of matters of public interest. During 1949 Lions clubs completed 101,736 activities in the following fields: agriculture, boys' and girls' activities, citizenship and patriotism, civic improvement, community betterment, education, health and welfare, safety, sight conservation and the United Nations. The 1949 program also included plans for establishment of Lions International city 27 miles south of the Chicago loop. Publications: *The Lion* and *El León* (Span-sh), monthly; *Lions International Monthly Letter*. Officers (1949): president, Walter C. Fisher, Queenston, Ont., Can.; secretary-general, Melvin Jones. Headquarters: 332 S. Michigan Ave., Chicago 4, Ill.

Milbank Memorial Fund.—Founded in 1905, the fund is a membership corporation under the laws of New York state, established to improve the physical, mental and moral condition of humanity and generally to advance charitable and benevolent objects. Its 1949 activities included contributions in the field of public health. It had endowment funds, as of Dec. 31, 1948, of $10,244,625.41. Officers (1949): president, Morris Hadley; executive director, Frank G. Boudreau, M.D.; secretary, Catherine A. Doran. Headquarters: 40 Wall St., New York 19, N.Y.

Music Library Association.—This association was founded in 1931 to promote the interests of music libraries of the U.S. and to foster the general aim of musical research, and in 1949 had about 900 members. Publications: *Notes*, a quarterly journal, and supplements; lists of music periodicals and checklist of thematic indices and code for cataloguing music. Officers (1949): president, Scott Goldthwaite, University of Chicago; secretary, Frank C. Campbell, Music Division, Library of Congress, Washington 25, D.C.

National Academy of Sciences.—Founded in 1863, by act of congress, to investigate and report upon any subject of science when called upon by any governmental department, the academy in 1949 numbered 439 members and had an endowment of $3,550,000, in addition to funds for general and specific purposes. At the University of Rochester, Rochester, N.Y., in October, the academy decided that it would not be in the best nterest of science for the academy to continue to administer the Atomic Energy commission fellowship program in which Federal Bureau of Investigation inquiry was required for fellows working in nonsecret fields. During the latter part of 1949 an academy committee on cortisone supervised the allocation of this rare drug which was in great demand. Officers (1949): Alfred N. Richards, president; Raymund L. Zwemer, executive ecretary; William J. Robbins, treasurer. Headquarters: 2101 Constitution Ave., Washington 25, D.C.

National Association for Advancement of Colored People.—This organiza-ion was founded on Feb. 12, 1909, to safeguard the full political, civil and legal rights of Negro citizens and secure for them equality of opportunity. Its membership in 1949 numbered 350,000. Its activities during he year included legal and legislative approaches to the problems of un-qual educational facilities; segregation in housing; fair employment practices; lynching; and poll tax questions. Publications: *Crisis* maga-ine, monthly, and the *NAACP Bulletin*, quarterly. Officers (1949): Arthur B. Spingarn, president; Roy Wilkins, acting secretary; Louis T. Wright, chairman of the board of directors. Headquarters: 20 West 40th St., New York, N.Y.

National Association of Manufacturers.—Founded in 1895 as a mutual and co-operative organization of U.S. manufacturers to foster trade, business and financial interests, to secure freedom from unlawful and unjust xactions and to diffuse accurate and reliable information among its membership, the N.A.M. numbers about 15,000 members, and sponsored n 1949 committee activities in fields as varied as employee benefits, ocial security, conservation and federal debt management. Through its ctivities, industry's point of view is presented to the public through vailable media. Publications include the weekly *NAM News* and the uarterly *NAM Law Digest*. Officers (1949): Wallace F. Bennett, president; Earl Bunting, managing director; Noel Sargent, secretary; Kenneth R. Miller, treasurer. Headquarters: 14 West 49th St., New York, N.Y.

National Association of State Libraries.—The association was founded in 898 to advance the administration of state libraries and to provide a orum for discussion of problems affecting them. Membership in 1949 onsisted of 44 institutional, three honorary life and four associate members. Publications include the *Proceedings of Annual Meetings* and heck lists of collected public documents of the states, legislative journals nd supplement, statutes and session laws and supplement. Officers (1949): Charles F. Gosnell, state librarian, Albany, N.Y., president; Alfred Decker Keator, state librarian, Harrisburg, Pa., secretary-treasurer. Headquarters: State Librarian's office, Harrisburg, Pa.

National Lawyers Guild.—This organization was founded in 1937 as a bar association devoted to the interests of the people of the U.S. and the professional welfare of the lawyer, and aims to combat repressive measures intended to destroy constitutional safeguards. Its purpose is to defend the civil liberties of all the people. Membership in 1949 was approximately 4,000. Publications: *National Lawyers Guild Review* and *National Guild Lawyer*, both quarterly, and miscellaneous pamphlets and reports. Officers (1949): Clifford J. Durr, president; Nathan B. Kogan, treasurer; Robert J. Silberstein, executive secretary. Headquarters: 902 20th St., N.W., Washington 6, D.C.

Research Libraries, The Association of.—Founded in 1932, the association's purpose is to develop and increase, by co-operative effort, the resources and usefulness of the research collections in American libraries. Membership in 1948 included 48 institutions. Publications include *Doctoral Dissertations Accepted by American Universities*, published annually. Officers (1949): Charles W. David, executive secretary, with headquarters at the University of Pennsylvania library, Philadelphia, Pa., and an advisory board of five members.

Rockefeller Foundation.—Founded in 1913 to promote the well-being of mankind throughout the world, the foundation made grants in 1949 in the following fields: medical science, chiefly for research in psychiatry and neurology; natural sciences, with emphasis on experimental biology and agriculture; social sciences, on problems of international relations, economics and group relations; the humanities, on the promotion of intellectual and cultural exchange among nations. Its assets as of Dec. 31, 1948, were $122,280,016. Officers (1949): president, Chester I. Barnard; secretary, Flora M. Rhind. Headquarters: 49 W. 49th St., New York 20, N.Y.

Rotary International.—Founded in 1905 as an international organization of representative business and professional men for the purpose of furthering co-operation and good will in business and community life. In 1949 there were more than 6,900 Rotary clubs with a membership of more than 330,000 in 82 countries and geographical regions. Activities in 1949 included: continued provision of fellowship grants for graduate study by students in countries other than their own; development of international understanding through its consultative status with the Economic and Social council of the United Nations and with the United Nations Educational, Scientific and Cultural organization. Publications: *Report on U.N. by Rotary International*, monthly; *The Rotarian*, and *Revista Rotaria*, monthly; also regional Rotary magazines published throughout the world in several languages. Philip Lovejoy was general secretary in 1949. Headquarters: 35 E. Wacker Dr., Chicago, Ill.

Seeing Eye, Inc., The.—A national philanthropy founded in 1929 and supported through annual memberships, public contributions and bequests. The society's purposes include the training of dogs as guides for the blind and the teaching of the blind to use their dogs. Activities in 1949 including the provision of dog guides to 165 blind men and women, of whom 90 received their first dogs and 75 their second or third dog guides. Membership in 1949 was about 23,000; a total of 1,600 dogs had been trained for the blind since the organization's inception. Publications: *The Seeing Eye Guide*, published quarterly for members of The Seeing Eye, and printed booklets on the organization and its policies. Officers: (1949) Henry A. Colgate, president; W. H. Ebeling, executive-vice-president; James Carey, treasurer. Headquarters: Morristown, N.J.

Sloan Foundation, Inc., The Alfred P.—Founded in 1934, the foundation's interest first centred wholly on economic education and research, and though this continues as its primary interest it also makes extensive grants for cancer research. Activities supported also include teaching institutes at major universities and the University of Chicago Round Table. Net assets Dec. 31, 1948, were $12,822,209.11. Officers (1949): Alfred P. Sloan, Jr., president; Arnold J. Zurcher, vice-president and executive director; James F. Kenney, secretary and treasurer. Headquarters: 30 Rockefeller plaza, New York 20, N.Y.

Sodality of Our Lady.—Founded in Rome, Italy, in 1563, this organization aims at developing devotion to Mary as the mother of God and at aiding members in perfecting themselves and in co-operating in the apostolic mission of the Catholic Church. Membership, 1949: 16,224 sodalities in the U.S., of which 4,000 were in elementary schools. Activities in 1949 included the conducting of eight summer schools of Catholic Action. Many institutes, rallies and conventions were conducted throughout the U.S.; the visual-aids department produced material for sodality promotion and religious instruction. Publications: *The Queen's Work*, monthly, for teen age sodalists; *Action Now*, monthly, for adults; and instruction pamphlets and discussion guides. Officers (1949): J. Roger Lyons; F. L. Zimmerman; A. J. Heeg; and other members of the Society of Jesus. Headquarters: 3115 S. Grand Blvd., St. Louis 18, Mo.

Temperance League of America.—Established in 1895 as the Anti-Saloon League of America, this organization is the national federation of state temperance organizations. The league maintains research and legal departments, promotes public education on the toxic effect of alcoholic beverages, advocates abstinence from their use and urges the enactment of legislation to restrict their sale and consumption, through local option, state action and restriction on advertising of liquors in interstate commerce. The national organization served as a clearing house for affiliated units in 33 states in 1949. Publication: *American Issue*. Officers (1949): Clayton M. Wallace, general superintendent; Bishop G. D. Batdorf, president. National headquarters: 131 B St., S.E., Washington 3, D.C.

Twentieth Century Fund.—Founded in 1919 by Edward A. Filene, the organization conducts research and public education on current economic issues. During 1949 publications dealt with labour-management relations; economic appraisals of Turkey and Brazil; and studies of monopoly trends in U.S. business. The fund developed the findings of its study *America's Needs and Resources*, published in 1947; issued a graphic summary of these findings entitled *U.S.A.: Measure of a Nation;* and produced, jointly with Encyclopædia Britannica Films Inc., a two-reel motion picture *Productivity, Key to Plenty*. Total assets were $6,840,787, as of Nov. 30, 1949. Officers (1949): president, John H. Fahey; treasurer, A. A. Berle, Jr.; executive director, J. Frederic Dewhurst. Headquarters: 330 West 42nd St., New York 18, N.Y.

Woman's Christian Temperance Union, National.—This organization was founded in 1874 to unite Christian women of the U.S. to rally public sentiment for total abstinence from all alcoholic liquors and to abolish traffic in alcoholic liquors. Membership in 1949 was about 400,000; publications include *The Union Signal* (weekly) and *The Young Crusader* (monthly). Public education work in 1949 included the holding of classes and the distribution of leaflets and pamphlets. Officers (1949): Mrs. D. Leigh Colvin, president; Elizabeth A. Smart, corresponding secretary; Violet T. Black, treasurer. Headquarters: 1730 Chicago Ave., Evanston, Ill.

Women's Clubs, General Federation of.—The federation was founded in 1890 and chartered by the U.S. government in 1901 to unite the women's clubs and like organizations throughout the world for mutual benefit, and to promote common interests in education, philanthropy, public welfare, moral values, civics and fine arts. International membership in 1949 was about 11,000,000, about one-half in the U.S. The year's activities centred on strengthening the United Nations and promoting world peace; contributions to war-devastated areas; scholarship and health and recreational services for youth in the U.S., and a prize contest on "Build a Better Community." Publication: *General Federation Clubwoman* (monthly). Officers (1949): Mrs. J. L. Blair Buck, president; Mrs. Earl B. Shoesmith, secretary; Mrs. Charles L. Fuller, treasurer. Headquarters: 1734 N St., N.W., Washington 6, D.C.

Young Men's Christian Association.—A world-wide fellowship seeking to improve the spiritual, social, recreational and physical lives of young people, the Y.M.C.A. was founded in London in 1844. For 1948, enrolments in various activities totalled 3,202,809. By Aug. 31, 1949, $5,599,165 of the $8,650,000 World Youth Fund for Reconstruction and Advance, related to needs in war-occupied and -devastated lands, had been raised. The national youth and government program was carried on in 1949 in 22 states; model state legislatures were held; the first national Conference of Boy Governors was held in June in Washington, D.C. Expenditures by the Y.M.C.A.s in the the U.S. in 1948 totalled $102,180,100, while capital investments totalled $246,682,300; endowed funds amounted to $46,102,700. Publications: National Council *Bulletin; Y.M.C.A. Year Book*. Officers (1949): Eugene R. McCarthy, president; Eugene E. Barnett, general secretary. Headquarters; 291 Broadway, New York 7, N.Y.

Young Womens Christian Association of the United States of America.—Founded in 1858 to build a fellowship of women and girls dedicated to the pursuit of Christian ideals, this organization in 1949 included 1,045 Y.W.C.A.'s conducting programs for women in the following fields: business, professional, industrial, agricultural, teen-agers, college and university students and home women. Emphasis in the Y.W.C.A. programs is on the promotion of physical health and mental and spiritual growth. In early 1949 the Y.W.C.A. constituency included 3,000,000 women and girls; the 1949 convention voted to change the Y.W.C.A. of the U.S.A. to a membership organization. Publications: *Women's Press* and *Bookshelf*. Officers (1949): Mrs. Arthur Forrest Anderson, president; Mrs. Roland P. Beattie, treasurer; Mrs. Harrison S. Elliott, general secretary. Headquarters: 600 Lexington Ave., New York 22, N.Y.

Zionist Organization of America.—Founded in 1897 to further the Zionist ideal and promote the interests of the Jewish renaissance, this organization had a membership in 1949 of 250,000. It awarded 12 fellowships for a year's study in Israel; sponsored a national drive to collect 300,000 tons of food for Israel; established a council to encourage capital investment there. Publications: *New Palestine; Inside Israel; Dos Yiddishe Folk*. Officers (1949): Daniel Frisch, president; Sidney Marks, executive director. Headquarters: 41 East 42d St., New York 17, N.Y.

Zonta International.—A service organization of executive women in business and the professions, founded in 1919, this organization promotes high ethical business and professional standards and the improvement of the legal, political, economic and professional status of women, plus international understanding through a world fellowship of executive women. Membership in 1949 included about 225 clubs with 7,500 members in the U.S. and other countries. Publication: *Zontian* and pamphlets. Officers (1949–50): Elizabeth Armstrong Judge, Cleveland, O., president; Harriet C. Richards, executive secretary. Headquarters: 59 E. Van Buren St., Chicago 5, Ill.

Sociology.

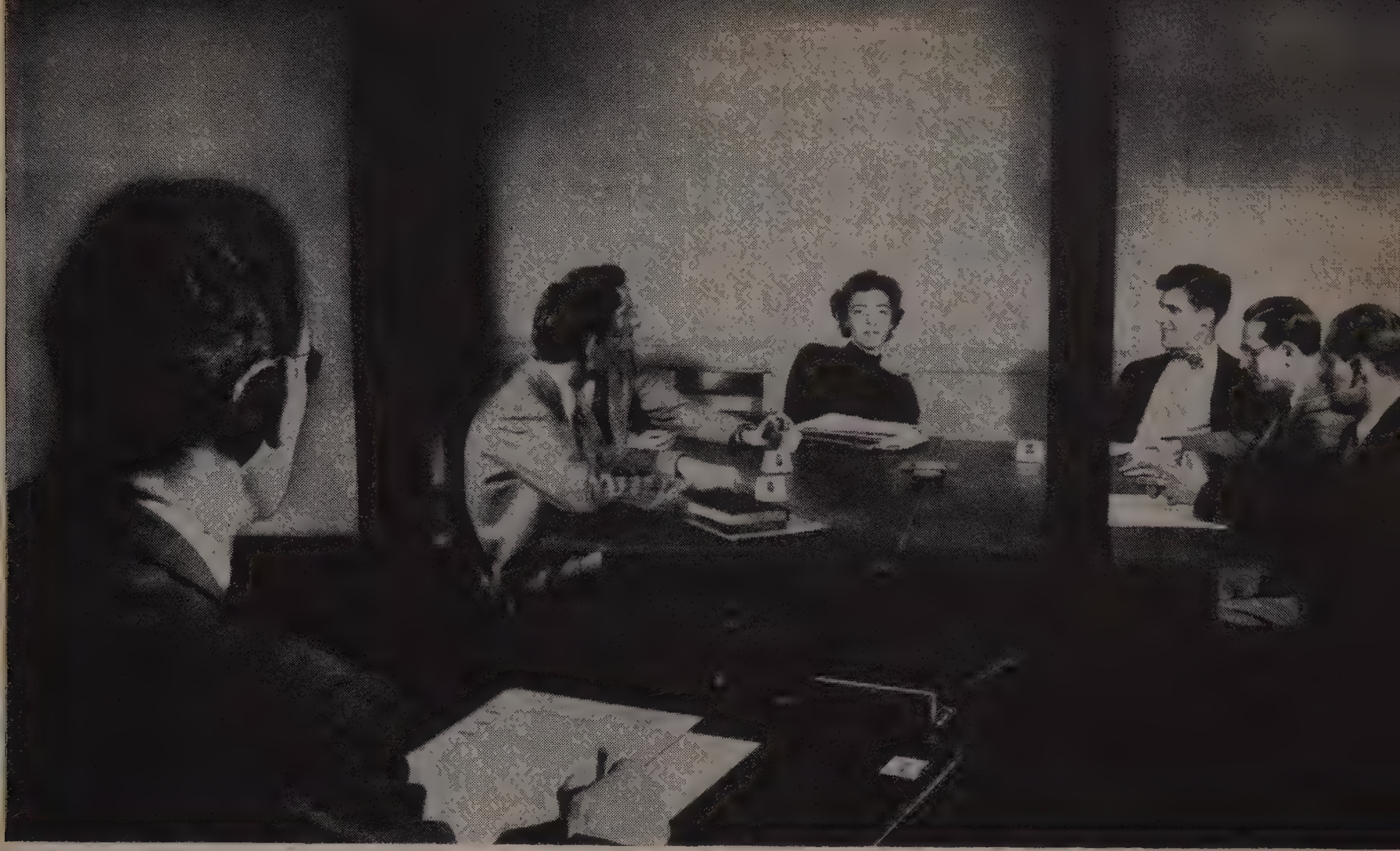
Among trends most clearly apparent in 1949 were: (1) waning of the child training emphasis in the personality and culture field; (2) emergence of the study of small groups as a field of major interest; (3) greatly increased interest in general sociological theory; (4) continuing attention to social stratification; (5) stronger interest in sociology of religion, albeit with primary reference to religious conflict; (6) sharp focus on the social-psychological problems dealt with in studies of United States troops during World War II; (7) prolonged discussion of the polls; and (8) evidences of a possibly developing Americanization of sociology in Europe and elsewhere.

During the postwar years a number of investigators, chiefly of anthropological background, had laid heavy stress on the presumably crucial importance of childhood feeding and toilet habits for the determining of adult character traits. In this emphasis they were followed by many social psychologists and sociologists. Secondary importance, only, was assigned to religious belief, political doctrine, class position and the like. So extreme did this trend become, however, that many of the previously uncritical began to question the conclusions about Japanese, German, American or Irish character which they had formerly accepted, and the result was a precipitate retreat, in some instances, from a position leading to patent absurdities. Nevertheless, the effect of persuasive anthropological accounts laden with the charm of the exotic, combined with the effect of a variety of psychoanalysis presented, like most other varieties, with evangelical fervour, sufficed to keep a number of believers within the fold, particularly when they were sociologists taking their anthropology and psychoanalysis at second hand. The most that could be said was that there was a distinct decline in enthusiasm and the voicing of distressing doubts.

In 1949 the American Sociological society established for the first time a section on the study of small groups, and R. F. Bales, active in the Laboratory of Social Relations at Harvard university, published an important book. It was important because for the first time a definite quantitative method for the study of social interaction in small groups was presented; hitherto only sterile field theory and topological analogies, or elaborately diagrammed verbalisms relying on terms lifted from other sciences, had been available as guides for the empirical researcher. In other words, the suggestive leads provided by Georg Simmel, Leopold von Wiese, and Ruth Hill Useem had been ignored. Bales' book not only took advantage of these leads, but explored the exploited new approaches. It was still too early to say whether the kind of quantification represented by Bales was likely to prove fruitful, more especially as key problems of cultural differentials were not directly confronted, but it provided a basis on which research leading to acceptance, rejection or modification of the method on grounds other than those of personal preference could be carried out.

General sociological theory had long been a stepchild of sociology, particularly in the United States, where raw empiricism had been in vogue since the middle 1920s. It was still in vogue in 1949, but the theoretical work of a new generation of U.S. sociologists, notably Talcott Parsons, Robert K. Merton and Kingsley Davis, had started a countervogue. True, this countervogue, using the slogan of structural-functional theory, had a host of uncritical followers, but it nevertheless represented a valuable shift in emphasis. Given this shift, it was apparent that earlier and equally significant theoretical work done in the United States and abroad would eventually emerge from stepchild status also and receive due although belated consideration. The major obstacle to theoretical advance was the unwillingness of publishers to issue treatises which had little prospect of extensive textbook use. This was partially overcome by the appearance of a few small, venturesome organizations. How long such noncommercial enterprises could survive was perhaps questionable, but in 1949 they had already rendered great service to U.S. sociology. Although the two U.S. sociological journals with the widest circulation, the *American Sociological Review* and *The American Journal of Sociology*, granted increased space, all things considered, to theoretical articles, the greatest proportional increase was registered by the North Carolina journal, *Social Forces*.

Social stratification studies, when they are beyond the journalistic level, necessarily lean heavily on general sociological theory. During 1949 W. Lloyd Warner's long-heralded book on social stratification appeared, but it unfortunately was pervaded by a kind of *ad hoc* theorizing that did little to integrate it with other work in the field. A. B. Hollingshead's study of "Elmtown," in spite of its limited focus, had a more readily adaptable theoretical framework. There were no journal articles of crucial importance in the stratification field, but continuing interest was apparent. This was particularly evident at the Christmas meet-



EXPERIMENTAL LABORATORY for the study of group interaction, set up in 1949 by Dr. Robert F. Bales of the Harvard Laboratory of Social Relations in Cambridge, Mass. Dr. Bales is shown recording observations behind a one-way window through which he could see but not be seen

ing of the American Sociological society, where three long papers on social stratification in Germany, the U.S.S.R. and England were presented in a two-hour session.

A field of much significance, sociology of religion, had until the late 1940s received little notice in the United States except in conjunction with the economic analyses of Max Weber and R. H. Tawney. This was in all probability the result of the areligious or even antireligious attitude of many U.S. sociologists; themselves uneasy about their own traditional religious backgrounds and possible unscientific biases, they had assumed that to be properly scientific one must avoid the study of religious conduct, except in a somewhat apologetic and disparaging way. Sociologists in Britain, and particularly on the continent, on the other hand, confronted by clericalist-anticlericalist movements, novel sects, state churches, *Kulturkampf, laicisme,* ecclesiastically sanctioned governments and many related matters, had long regarded sociology of religion as of the highest scientific import. The pages of the recently revived *L'Année sociologique* and *Kölner Zeitschrift für Soziologie,* as well as *Cahiers sociologiques,* the British *Sociological Review, Psychologie des peuples* and several other journals testified to this. Further, the elaborate bibliography by Daniel Warnotte which appeared posthumously during 1949 in the *Revue de l'Institut de Sociologie Solvay* was studded with books and articles on sociology of religion. Interest had begun to appear in the United States but, characteristically, in textbooks and collections of readings for students rather than in systematic treatises. This interest may have been evoked by the same series of events which brought forth Paul Blanshard's *American Freedom and Catholic Power,* but in any case it had become definitely apparent. Whether it would result in impartial, unbiased, *i.e.,* genuinely scientific, studies could not yet be foreseen.

A major effort at a genuinely scientific approach to prediction of military conduct was made in *The American Soldier in World War II,* a four-volume treatise (financed by the Social Science Research council) by Samuel Stouffer of Harvard university and others. Opinions about its merits differed sharply. In spite of the special session of the Sociological Research association devoted exclusively to discussion of the treatise at the Christmas meeting, it seemed clear that its merits and demerits had not yet been thoroughly assessed, and that controversy would continue for some time.

Similar controversy surrounded the aftermath of the polling debacle of the 1948 election. The Social Science Research council financed a large meeting in the spring of 1949 for discussion of what went wrong with the polls. No definite conclusions were reached, but most of the discussants, themselves active along related research lines, were sympathetic with the pollsters' plight, although at the same time critical of certain techniques.

Through the operation of the Fulbright grants, researchers on the staffs of the occupation forces in Germany and Japan, general North American influence in Mexico, Central and South America and in other ways, a trend toward the Americanization of sociology seemed to have emerged. Nels Anderson, with the occupation forces in Germany, secured the services of experts from the United States to carry out a study of the Darmstadt community, using younger German sociologists as field workers, tabulators, etc. J. H. Kolb of the University of Wisconsin, Madison, carried out a rural community research project in Norway for the University of Oslo. Jean Stoelzel of Bordeaux, Fr., trained at Columbia university, continued to head the French Institute of Public Opinion. John Bennett and Herbert Pessin of Ohio State university, Columbus, did much to influence developments in Japanese anthropology and sociology. Several British universities were endeavouring to secure the services of U.S. sociologists on short- and long-term bases, and the University of Ceylon did likewise. Howard Becker's book on German youth appeared in expanded form in German under the title of *Vom Barette Schwankt die Feder.* Louis Wirth of the University of Chicago, Ill., was elected first president of the new International Sociological society, sponsored by the United Nations Educational, Scientific and Cultural organization.

The Christmas meeting of the American Sociological society took place in New York city as part of the annual convention of the American Association for the Advancement of Science. The 1950 meeting was scheduled to be in Denver, Colo., during early September. Leonard S. Cottrell of Cornell university was to preside at the September meeting. (H. Bec.)

Sodality of Our Lady: *see* Societies and Associations.

Soekarno, Achmed (1900–), first president of the United States of Indonesia, was a radical nationalist and social reformer in Java while still in his 20s. In 1927 he fostered a nationalist movement which resulted in his being jailed. Released in 1932, he kept up his agitation until the Netherlands authorities in the East Indies exiled him to Flores Island, and later held him in Sumatra. He was freed when the Japanese swept across the islands in 1942, and he revived Indonesian nationalism, using the Japanese slogan of "Asia for the Asiatics." When the Dutch returned to Indonesia after the war, Soekarno and his forces declared their independence, and he proclaimed the Indonesian republic with himself as president, Aug. 17, 1945. Four years of warfare ensued, and even after a United Nations committee intervened to try to bring about peace, military violations by both the Dutch and Indonesians continued. In 1948 the Dutch opened full-scale attacks against the republicans, until the United Nations Security council called for a halt. Meantime, Dutch soldiers had again captured and exiled Soekarno. By Oct. 1949, the Dutch had reversed their severe stand against the republic, and approved its independence as an equal partner of the Netherlands under the Dutch crown. Soekarno was unanimously elected president on Dec. 16 and sworn in Dec. 17.

Softball. The U.S. men's championship tourney of the Amateur Softball association, played at Little Rock, Ark., was won by the Tip Top Tailors of Toronto, Ont., who defeated the Clearwater, Fla., Bombers, 3–1, in an 18-inning final for an undefeated tournament mark. Women's laurels were retained by the Phoenix, Ariz., Ramblers, who also went unbeaten in their competition at Portland, Ore.

The National Softball congress competition for men at Greeley, Colo., attracted 17 clubs, the Hanford Kings of California capturing the crown. The women's tournament at Phoenix was won by the Phoenix A-1 Queens, who regained the title they had won in 1947. (T. V. H.)

Soil Erosion and Soil Conservation. By 1949 there were movements in nearly all countries for control of soil erosion as a means to improve food-supply conditions. In addition, a worldwide survey of the incidence of soil erosion was begun by the Food and Agriculture organization (F.A.O.) of the United Nations, with funds supplied by the Conservation Foundation of the United States. Land areas were being grouped into three categories: little or no significant erosion; erosion that had moderately damaged production; and severe erosion that had seriously reduced production or made it impossible. The information would be made available in a series of continental maps patterned after the soil erosion map of the United States completed by the soil conservation service in 1947.

In some countries, difficulties had been encountered in setting up sound organizations for conservation work on the land before the necessary background information and data had been acquired. To deal with these difficulties more effectively, a chronology of eight basic steps in conservation organization procedure was presented by the United States to other nations at the United Nations Scientific Conference on the Conservation and Utilization of Natural Resources, held in New York city Aug. 17–Sept. 6:

1. Adoption of a national policy, preferably by legislation, to permit governmental guidance and participation in soil and water conservation.
2. Formation of a national soil conservation agency to operate under the national policy.
3. Initiation of soil and water conservation research in all natural physical areas, and interchange of knowledge on conservation methods as acquired.
4. The making of an over-all inventory of soil and water resources simultaneously with the starting of a research program.
5. The setting up of demonstrations, on a farm or watershed scale, to test conservation methods and enlist co-operation of farmers.
6. Decentralization of administration, with technical personnel so placed that they could work directly with landholders.
7. Provision for local farmer organizations to assume local leadership and active management of soil conservation programs within communities. (The soil conservation districts of the United States, Mexico, the Union of South Africa, Australia and New Zealand; the prewar conservancy districts of China; and the intensive conservation areas of Southern Rhodesia were examples of such local organizations.)
8. The building up and maintaining of a staff of trained soil conservation technicians to provide on-site assistance to individual farmers.

Reports received during 1949 showed that soil conservation work was being carried on in the following countries: Canada, Costa Rica, Cuba, El Salvador, Guatemala, Haiti, Mexico, Nicaragua, Panamá, Trinidad, United States, Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Peru, Uruguay, Venezuela, Austria, Belgium, Cyprus, France, Germany, Great Britain, Greece, Italy, Portugal, Spain, U.S.S.R., Burma, China, India, Israel, Korea, Netherlands Indies, Pakistan, Philippines, Siam, Australia, New Zealand, Belgian Congo, French Equatorial Africa, Kenya, Northern Rhodesia, Southern Rhodesia, Sudan, Tanganyika, Union of South Africa.

United States.—During 1949, about 115,000 new soil conservation farm plans, covering more than 32,000,000 ac., were prepared by soil conservation service technicians working with farmers and ranchers in soil conservation districts. More than 22,000,000 ac. were given complete conservation treatment, and 26,000,000 additional acres were covered by detailed conservation surveys. As of July 1, a total of 740,000 farms covering 202,000,000 ac. had been planned for conservation treatment and use. Complete conservation plans were in operation on 668,322 farms totalling 185,000,000 ac. By Nov. 1, farmers and ranchers had organized 2,192 conservation districts covering more than 1,193,000,000 ac. and including 4,619,925 farms, of which 57,950 were in Alaska, Puerto Rico, the Virgin Islands and Hawaii.

Throughout the country, in co-operation with the experiment stations of all states, and also in Puerto Rico, the soil conservation service carried out many research investigations in specific areas. Outstanding results were reported in the use of legumes in combination with stubble mulching on croplands of Washington and Idaho; grass-legume cover crops in southern California's vineyards for wind-erosion and sand-drifting control; increased use of organic matter for tobacco lands of Maryland and North Carolina; and extension of the disk-pitting principles, formerly developed in Wyoming, into the arid range lands of Arizona as a seed-bed preparation treatment resulting in highly successful establishment of grasses on barren arid areas.

Fourteen additional states began Pittman-Robertson wildlife habitat improvement projects in co-operation with soil conservation districts, making a total of 35 states so engaged. The state wildlife agencies supplied planting stock, seeds and fencing materials to carry out wildlife-area provisions of farm conservation plans prepared by farmers with the assistance of soil conservation service field technicians.

An important aspect of the soil conservation program was the distinct trend toward grassland farming in many soil conservation districts. Completed conservation farm plans called for nearly 13,000,000 ac. of range and pasture seeding, more than 87,000,000 ac. of range and pasture improvement and large quantities of grass seed for use in crop rotations. Seed of scientifically tested conservation grasses continued in short supply, and for this reason the resources of the soil conservation service and hundreds of soil conservation districts were utilized to obtain larger amounts. Greatest success was in the harvesting of native grass seed from farm plots in northeastern Oklahoma and Texas. More than 5,000,000 lb. of the seed of native tall and mid-season grasses were harvested on these farms. The bulk of the harvest consisted of the bluestem, Indian grass and switch grass—the best grasses known for planting in areas subject to wind erosion. Tall, higher-yielding grasses also were in demand for conservation plantings in northern and southeastern states, where efforts were made to increase seed supplies of orchard grass, brome grass, timothy and the newly developed Kentucky-31 fescue or Suiter's grass. The Great Plains Agricultural council reported that by July 15, 1949, more than 10,200,000 ac. of formerly cultivated land in the Great Plains had been returned to grass.

Active flood control projects were carried out by the soil conservation service in co-operation with farmers and ranchers in 11 major watersheds during 1949: the Little Sioux in Iowa; the Yazoo and Little Tallahatchie in Mississippi; the Coosa in Georgia; Buffalo creek in New York; the Trinity and Middle Colorado in Texas; the Los Angeles and Santa Ynez in California; the Washita in Oklahoma and Texas; and the Potomac in Virginia, Maryland, Pennsylvania and West Virginia. Flood-control surveys also were under way or completed in 59 other watersheds, and plans had been prepared by soil conservation service technicians for 450 subwatersheds.

Heavy winter snows provided an outstanding test of the value of windbreak plantings in the Great Plains, and this combined with wider use of mechanical tree planters stimulated widespread planting in the autumn of the year. In the heart of the blizzard area, belts which had been properly planted and cared for not only kept snow from drifting over roads and around farmsteads, but trapped snow in and between belts for moisture storage in the soil. About 1,300 mi. of field windbreaks were planted in soil conservation districts in the fiscal year 1948–49. This brought the total planted through soil conservation planning since 1942 to approximately 7,000 mi. (80,000,000 trees).

Australia.—More than 100 soil conservation demonstrations had been established along the western slopes, in the tablelands and the Hunter valley and in other parts of the country. The areas varied from 300 to 1,000 ac., but there were several on which mechanical conservation work covered a more extensive area. Also, the demonstration program was extended by: (1) completion of about 90 smaller demonstrations in co-operation with farmers in the catchments of Keepit, Burrendong and Glenbawn dams, with limited financial assistance from the government; and (2) by introduction of an equipment-hire scheme to enable landholders to undertake larger conservation works which they could not normally carry out with their own equipment. Typical conservation practices applied through the equipment-hire scheme were diversion banks, silt traps, holding dams, grassed waterways, graded banks and pasture furrowing.

China.—An inspection was made early in 1949 of the Yellow river soil and water conservation experiment station and substations, at Tienshui, Kansu province, by technicians of the F.A.O. The station was found to be unaffected by war conditions, with conservation practices rapidly extending to farmland of the region. The problems of a large portion of the Yellow river watershed were reported to be the same as those dealt with at Tienshui, and the practices developed therefore could be used effectively over an immense territory. It was recommended that many similar stations should be set up at all strategic points as soon as possible to assist local people with their food-growing problems.

India.—A soil conservation program was begun in the state of Bihar, northeast India, in connection with the Damador Valley corporation, a conservation scheme similar to the Tennessee Valley authority in the United States. A large part of the valley was found to be in a serious state of erosion. There was urgent need for rehabilitation in the Tilaiya and Konar areas, where erosion was most advanced. Arrangements were being made for the inhabitants of these two areas to be resettled elsewhere before the flood season of 1950. Good vegetative cover was stressed in the initial stage of the program, with reforestation, the building of upstream dams, storage tanks and terraces, and grassland improvement also started. The upper catchment of the Damador valley, approximately 4,400,000 ac., was assigned to the soil conservation and land use department for rehabilitation. It was planned to base the conservation program largely on the ability of the cultivators in building terraces, together with their understanding of the value of compost and manure, and the great regenerative power of the native forests of the region.

Italy.—An intensive survey of the mountain pastures in central and southern Italy, Sicily and Sardinia was made in 1948 and 1949 by a range-management specialist of the U.S. soil conservation service, delegated by the F.A.O. for the work. A plan was drawn up for improvement of vegetative conditions and grazing practices, and for research needed to support a pasture improvement program for all Italy. It was found that, on the average, Italian mountain pastures were yielding only one-third to one-half of the forage that could be produced under conservation treatment and management. Italy already was carrying on extensive reclamation work, but much of the land that had been used for grazing and cultivation for centuries was found to be in urgent need of conservation treatment to preserve it and improve per-acre yields.

Philippines.—The division of soil survey and conservation, department of agriculture and natural resources, completed a reconnaissance survey of the erosion problem. The survey showed that of the 29,094,000 ac. of open and cultivated land in the Philippines, about 9,871,000 ac. were subject to severe erosion; 12,368,000 ac. were subject to all stages of erosion; and 6,855,000 ac., largely rice paddy, were not eroded or only slightly eroded. A total of 2,277,000 ac., mostly land cultivated by shifting cultivation and abandoned, should be reforested to save it from destruction by flooding and other damaging processes. During the year, the division of soil survey and conservation established the first soil conservation demonstration farm at San Ildefonso, Bulacan.

Southern Rhodesia.—A strong combined effort by farmers, the ministry of agriculture and the natural resources board to spread soil and water conservation to all parts of the country was started early in 1948 and carried on with remarkable effectiveness in 1949. The first step was formation of two new branches of the ministry of agriculture—the department of research and specialist services and the soil conservation and extension branch. A vigorous educational program was launched with a view to stimulating formation of intensive conservation areas (similar to soil conservation districts in the United States) and to train young men to act as conservation officers in the areas. By the end of 1949 there were 60 such areas, formed by farmer initiative and vote and served by conservation technicians, many of whom were recruited on completion of the conservation course for ex-servicemen at Witwatersrand university, Union of South Africa. Practices applied to the land included contour ridging, small dams and reservoirs, gully control, rotations including leguminous crops, reseeding of semi-arid grasslands, grazing management to allow establishment of native grasses, veld fire prevention, fencing of native pastures, and streambank structures and plantings to prevent further loss of bottomlands by flooding and cutting. Subsidies to 50% of cost were granted to landowners constructing dams in areas having less than 25 in. of rainfall. (*See* also Agriculture; Aqueducts; Dams; Irrigation; Meteorology.)

Films of 1949.—*What Makes a Desert* (Young America Films Inc.).
(H. H. Be.)

Solar System: *see* Astronomy.

Solomon Islands: *see* Pacific Islands, British; Trust Territories.

Somaliland, British: *see* British East Africa.

Somaliland, French: *see* French Union.

Somaliland, Italian: *see* Italian Colonial Empire.

South Africa, British: *see* British South African Protectorates.

South Africa, The Union of. A self-governing dominion of the British Commonwealth of Nations. The four provinces of which it consists, the Cape of Good Hope, Natal, the Transvaal and the Orange Free State, extend from the southernmost point of the African continent to the Limpopo in the north. The former German colony of South-West Africa (area 317,725 sq.mi., pop. est. mid-1947: 370,000) is administered under mandate as an integral part of the Union, but this territory had not been incorporated as a province. Area: 472,550 sq.mi. (incl. Walvis Bay, 430 sq.mi.); pop. (mid-1949 est.): 12,111,800; (1946 census): 11,391,949 (Europeans 20.7%; native [Bantu] 68.7%; Asiatic 2.5%; mixed 8.1%). Official languages (European pop., 1946): Afrikaans (55.9%), English (39.9%). Religions: (European pop., 1946) Christian 95.5%, Jewish 4%; (non-European pop., 1946) Christian 51%, no religion 44%, remainder Hindu, Moslem and Buddhist. Chief towns (pop., 1946 census): Capetown (seat of legislature, 454,052, including 220,398 Europeans); Pretoria (seat of government, 236,367, including 130,180 Europeans); Johannesburg (727,743, including 332,026 Europeans); Durban (357,304, including 130,143 Europeans); Port Elizabeth (146,231, including 65,271 Europeans). Governor-general, 1949: Maj. Gideon Brand van Zyl; prime minister and minister of external affairs: Daniel François Malan.

SOUTH AFRICAN POLICE (left) dispersing a group of Negro rioters in Durban, during an outbreak of inter-racial hostility, Jan. 13-16, 1949, in which more than 100 persons were killed and more than 1,000 injured

History.—The year 1949 was notable for political controversy, racial feeling, economic difficulties and financial stringency in governmental, commercial and industrial circles. The Union parliament met on Jan. 26 and remained in session until early July. A 20% surcharge on both income and supertaxes was imposed. The estimated deficit for the year was £2,400,000, as against a surplus for the previous year of £7,500,000. In April the prime minister attended the commonwealth conference in London, dealing with the proposed change of status of both India and Ireland in the British Commonwealth of Nations.

In June two controversial measures were passed, the Citizenship act and the Mixed Marriages act. The former, ostensibly introduced in order to regularize the position of South African citizens consequent upon the new commonwealth status, in effect disfranchised about 45,000 recent settlers, who had emigrated to the Union in the belief that they would enjoy full rights of citizenship after two years of residence. In future, British and other commonwealth immigrants to South Africa would have to wait five years for citizenship and settlers from other countries six years. Even then their admission to citizenship would be entirely dependent upon the approval of their registration by the minister of the interior, who might refuse citizenship without assigning any reason.

The Mixed Marriages bill was introduced to make illegal all marriages between Europeans and people of other races. Public opinion, it was pointed out by the opposition, had already reduced these unions to no more than 77 out of 28,385 marriages in 1946.

In August the cabinet was reconstructed and the portfolios reapportioned.

Native Affairs.—Relations between Europeans and the other races of the Union deteriorated during the year. In January the Natives Representative council was dissolved. This body had not, in any event, met for two years. The secretary for native affairs made it clear that the government was not prepared to abolish discriminatory legislation, nor to give the council any executive authority over the development of the native reserves or the finances of native councils. It was, however, prepared to consider any reasonable suggestions for co-operation between the white and black races. Its intention was to encourage and develop the local council and *Bunga* system throughout the Union, with due regard to the ethnical and tribal situation of the several native peoples.

While parliament was still in session A. J. Stals, minister of education, said that grants to enable native children to obtain meals at school would be withdrawn. The opposition to this measure was so intense that it was subsequently modified. Although two conferences were held on the question of native housing, for which there was an estimated demand for almost 300,000 dwellings, little was settled. The municipalities, with some justice, claimed that they were in no position to finance the vast schemes required. Industry, on the other hand, showed extreme reluctance to pay any subsidy toward housing their native employees, without whom their factories could not function. Coupled with bad housing conditions, wages for native workmen were below proper subsistence level to such an extent that malnutrition, tuberculosis and venereal disease were rampant in many districts.

So serious were the results of this situation that, on facts given by C. R. Swart, the minister of justice, communism was said to be increasing its adherents among the native population at an alarming rate. Bad feeling on the whole position of the natives resulted in serious riots with loss of life at Durban during January and minor disturbances took place at Johannesburg, Krugersdorp and Randfontein later in the year.

Economic Position.—The most important events during 1949, in the economic sphere, were the ban on imports, because of the shortage of both sterling and dollars, and devaluation. Strict import control was imposed and certain goods were completely banned because South Africa had spent more than it could afford abroad. At the same time, after the nationalist government took office, much capital left the country; nor had it proved easy for the Union later to raise any large loans either internally or from Great Britain or the United States. Devaluation immediately improved the situation of the gold mines, whose output appreciated about £40,000,000 overnight, and many of the mines, regarded as marginal producers, began to show increased profits. Another consequence was the payment of 15% higher wages to mine workers both in the gold and coal industries.

The ban on imports, besides hitting commerce adversely, also struck at Union industries importing raw materials. Shortage of ready money affected the building industry, many workers becoming unemployed.

Education.—State schools (1947); Primary schools 1,190 (European 1,110), pupils 115,368 (European 92,291), teachers 3,927; secondary and high schools 241, pupils 75,339 (European 65,232), teachers 3,122; mission schools 3,036, pupils 386,054, teachers 9,421; other schools 99, pupils 3,031; training institutions 32 (European 9), pupils 3,790 (European 874), teachers 218. Private schools (1947): Kindergarten schools 92; primary schools 773; secondary schools 114; commercial and business schools 19; other schools 10. Pupils at all private schools 73,787 (European 36,500). Technical colleges (1946) 11, students 43,110, teachers 2,063. Universities (1946) 4 and constituent colleges of the University of South Africa 5, students 19,994, professors and lecturers, 1,743.

Finance and Banking.—Budget (in South African pounds): (1948–49) revenue 143,400,000, expenditure 135,800,000; (1949–50 est.) revenue 137,800,000, expenditure 140,200,000. National debt (March 1949): £(S.A.)662,100,000. Currency circulation (Aug. 1949): £(S.A.)63,600,000. Gold reserve (Sept. 1949): $121,000,000 U.S. Bank deposits (Aug. 1949): £(S.A.)287,900,000. Monetary unit: South African pound at par with the pound sterling, valued, at the end of 1949, at $2.80 U.S.

Foreign Trade.—(1948) Imports: £(S.A.)352,200,000. Exports, excluding gold bullion: (1948) £(S.A.)134,300,000.

Transport and Communications.—Licensed motor vehicles (Dec. 1948): cars 384,000, commercial vehicles 104,000. Railways: (1945) 13,480 mi.; passengers carried (1945) 218,000,000; freight ton-mi. (1948) 9,858,000. Telephones (1947–48): subscribers 206,493.

Agriculture and Fisheries.—Main crops (in metric tons, 1948): maize 1,800,000; wheat 477,000; oats 87,000; barley 43,000; rice (milled equivalent) 17,000; potatoes 303,000; peanuts 74,000; sugar (raw value) 533,000; tobacco 18,600; oranges and tangerines 180,000. Livestock: cattle (Aug. 1946) 12,593,000; sheep (Aug. 1946) 30,382,000; pigs (1945–46) 1,118,000; horses (1945–46) 687,000; chickens (Aug. 1947) 9,194,000. Wool production (in metric tons, on greasy basis, 1948–49): 99,000.

Industry.—(1947) Industrial establishments 11,886; persons employed 558,725 (Europeans 194,937); gross value of output £491,800,000; net value of output £225,100,000. Fuel and power (1948): coal (in metric tons) 23,558,000; electricity 9,259,000,000 kw.hr. Raw materials (in metric tons, 1948): iron ore, metal content, 1,163,000; pig iron 654,000; steel ingots and castings 599,000; copper 29,800. Gold (in fine oz., 1948): 11,585,000. Diamonds (in metric carats, 1948): 1,382,000. Cement (in metric tons, 1948): 1,308,000. Employment in manufacturing, including building (index on base 1937=100,1948): 156.

(W. R. Gn.)

South America: *see* ARGENTINA; BOLIVIA; BRAZIL; BRITISH GUIANA; CHILE; COLOMBIA; ECUADOR; PARAGUAY; PERU; SURINAM; URUGUAY; VENEZUELA.

South Carolina. A south Atlantic state of the United States, eighth of the original 13 to ratify the constitution in 1788. It is known as the "Palmetto state." Area: 31,055 sq.mi., 461 sq.mi. being inland water; pop. (1940): 1,899,804; white, 1,084,308; Negro, 814,164; others, 1,332; 75.5% rural; 0.3% foreign-born. On July 1, 1949, the census bureau estimated the population at 2,001,000. Capital: Columbia (62,396). Other cities: Charleston (71,275); Greenville (34,734); Spartanburg (32,249); all these cities are greatly enlarged since these 1940 figures.

History.—The state house of representatives revised its rules in 1949 by reducing standing committees from 20 to 8, but failed to eliminate the filibuster. Hostility between regular Democrats and Dixiecrats somewhat hampered legislative efficiency. The sum of $300,000 was voted to establish a Negro girls' "industrial" school (reformatory). Constitutional amendments popularly ratified in 1948 abolishing the governor's pardoning power (except for commuting death sentences to life imprisonment) and permitting divorce for adultery, desertion, physical cruelty or habitual drunkenness were given final ratification by the legislature. A constitutional amendment abolishing the poll tax requirement for voting was adopted by the legislature, to be voted on by the people in 1950.

Attempts to shape primary election laws, entirely repealed several years before in the attempt to prevent federal court interference with the "white primary," were unsuccessful and that task was left to the legislature assembling in Jan. 1950, if the primaries were not to be conducted without any statutory regulation.

Application for admission to the municipally owned College of Charleston by a Negro caused the city council to give the college to private trustees, though they promised to continue the subvention for support, amounting, with that from the county, to half the college's income. The state was co-operating with nine other southern states in supplying outside their borders at public expense special advanced education for Negroes which their institutions did not supply.

The chief state officials of 1949 included: J. Strom Thurmond, governor; W. P. Blackwell, secretary of State (died Dec. 1949), ad interim appointee T. P. Bradham; Jeff B. Bates, treasurer; John M. Daniel, attorney general; E. C. Rhodes, comptroller general; Jesse T. Anderson, superintendent of education.

Education.—For the year ending June 30, 1949, enrolment in white elementary schools totalled 185,174, an increase of 5,949; in Negro elementary schools, 183,743, an increase of 5,713; in white high schools, 77,370, an increase of 5,242; in Negro high schools, 31,816, an increase of 2,389; total white and Negro teachers, respectively, numbered 10,061 and 6,704; expenditures for white schools, $38,545,974; for Negro schools, $12,604,686. Administration, vocational training and adult education on the school level consumed an additional $7,898,598.

Social Insurance and Assistance, Public Welfare and Related Programs.—In the year ending June 30, 1949, federal allocation for needy persons totalled $8,964,325, to which the state added $4,659,990. Assistance went to 43,533 aged persons, 1,745 needy blind, 28,847 dependent children and 6,450 persons needing general assistance, making a total of 80,575 persons assisted. The state unemployment trust fund totalled, June 30, 1949, $52,354,992. Payments during the fiscal year then ending (duplicate names not eliminated) went to 52,291 applicants and totalled $7,833,905. Patients in the state hospital (for mentally diseased), June 30, 1949, totalled 5,095; in the school for feeble-minded, 972; prisoners in penitentiary and state farms, 1,413; in reformatory for white boys, 217; in Negro boys' reformatory, 182; in white girls' reformatory 107.

Communications.—Paved highways, June 30, 1949, amounted to 10,398 mi.; miles under state highway department, 19,323; highway funded debt, $62,924,000. The gasoline tax yielded $19,135,257; licences, $4,473,067; bond sales, $15,000,000. Federal aid amounted to $4,652,799 of the $44,200,109 revenues for highways. Railroads measured 3,563 mi. Eastern, Delta, National and Southeastern air lines cross the state.

Banking and Finance.—On June 30, 1949, there were 25 national banks, plus 25 branches; 102 state banks, plus 10 branches, with capital account, deposits and resources, respectively, as follows: national, $21,960,000, $384,053,000, $407,871,000; state banks and depositories, $18,706,325, $233,764,993, $252,859,105. Resources of the 32 federal building and loan associations totalled $76,584,161; of the 40 state associations, $28,853,057. The general appropriation act for year ending June 30, 1950, totalled $112,854,709. The state debt, June 30, 1949, totalled $66,275,098 ($62,924,000 being for roads). Federal income taxes year ending June 30, 1949, totalled $179,201,118; other federal internal revenues, $25,644,826. Exports totalled $63,100,000; imports, $15,900,000; duties on imports $1,115,830.

Agriculture.—The chief field and truck crops for the year 1949 were valued at $274,908,000, being 19% less than 1948 values, chiefly because of the small cotton crop and lower prices. Harvested acreage was about 4,400,000.

Table I.—*Leading Agricultural Products of South Carolina*

	1949	1948	Average, 1938-47
Corn, bu.	31,590,000	28,360,000	25,235,000
Wheat, bu.	1,930,000	3,332,000	3,029,000
Oats, bu.	16,484,000	12,144,000	15,462,000
Barley, bu.	518,000	473,000	434,000
Rye, bu.	86,000	76,000	172,000
Hay, tons	484,000	461,000	441,000
Irish potatoes, bu.	1,650,000	1,408,000	2,684,000
Sweet potatoes, bu.	4,800,000	4,284,000	5,430,000
Tobacco, lb.	147,630,000	131,560,000	117,124,000
Cotton, bales	560,000	871,000	716,000
Cotton seed, tons.	226,000	359,000	288,000
Peaches, bu.	2,490,000	3,160,000	3,671,000
Pecans, lb.	2,700,000	3,600,000	2,309,000
Peanuts, lb.	14,300,000	18,200,000	17,332,000

Manufactures.—The value of manufactures for the year ending June 30, 1949, was $1,701,838,522, against $1,797,461,287 for the previous year. Employees numbered 173,926 against 179,859 the year before. Total capital in manufactures was $736,547,207, against $583,866,964 the year before.

Mineral Products.—Mineral products, chiefly stone and clays, especially granite and kaolin, for the year totalled in value $9,727,287, as against $8,497,129 the year before. (D. D. W.)

Table II.—*Products of Principal Industries of South Carolina*

	Year ending June 30, 1949	Year ending June 30, 1948
Textiles (including knitting)	$1,175,337,135	$1,293,547,124
Lumber products (barrels, boxes, baskets, veneering, paper and pulp, furniture, woodwork)	118,876,202	126,918,753
Electricity	42,594,385	37,604,244
Clothing	62,760,486	50,475,771
Fertilizers	35,921,923	31,962,824

South Dakota. A north-central state of the United States, admitted as the 40th state on Nov. 2, 1889, South Dakota is popularly known as the "Coyote state." Area: 77,047 sq.mi., of which 511 sq.mi. are water; population (1940): 642,961, with 158,087 listed as urban and 484,874 as rural; Indian population 23,347. The federal bureau of the census estimated the population on July 1, 1949, at 649,000. The state census taken during 1945 revealed a population of 589,920. Capital: Pierre (4,218 in 1945, according to state census). Principal cities with 1945 census figures: Sioux Falls (42,343), Aberdeen (18,103), Rapid City (17,262), Huron (11,146) and Mitchell (9,894).

History.—The Pick-Sloan plan for the comprehensive development of the Missouri river basin continued as the main topic of public discussion during 1949. This project includes four multiple-purpose dams on the main stem of the Missouri within South Dakota and the construction of seven reservoirs for the irrigation of approximately 900,000 ac. Construction on the Fort Randall dam near the Nebraska boundary line was started on July 30, 1946, and on the Oahe dam, 7 mi. N. of Pierre, on Sept. 16, 1948. The dedication of the Angostura dam on the Cheyenne river in the southwestern corner of the state on Sept. 29, 1949, marked the practical completion of the first irrigation reservoir.

Record-breaking appropriations totalling $42,592,918 were authorized by the legislature which closed its 60-day session on March 4, 1949. A major legislative problem concerned the payment of the $30,000,000 veterans' bonus approved by the voters in Nov. 1948. Measures enacted to provide the necessary funds included a direct appropriation of $7,800,000, a two-mill state property tax, a 3% sales tax on liquor and cigarettes and an increase in the state sales tax from 2% to 3%.

State officials during 1949 included: George T. Mickelson, governor; Rex Terry, lieutenant governor; Sigurd Anderson, attorney-general; Annamae Riiff, secretary of state; Clarence E. Buehler, treasurer; and Harold S. Freeman, superintendent of public instruction (elected on nonpartisan ticket).

Education.—The school census, ages 6–21, was 155,935 in 1948–49, compared with 154,780 in 1947–48. The enrolment was 86,478 in elementary schools and 28,401 in high schools. Total expenditures were $23,852,762.

Social Insurance and Assistance, Public Welfare and Related Programs.—During the calendar year 1948 the state department of social security distributed $4,887,754 among 12,026 persons in old-age assistance; $1,021,251 to 1,804 families as aid to 4,505 dependent children; and $78,678 for the needs of 210 blind persons. Eight penal and charitable institutions were in operation on a legislative appropriation of $2,289,699 for the fiscal year 1948–49.

Unemployment benefit payments during 1948 amounted to $293,123 at an average weekly rate of $15.99. Readjustment allowances paid to unemployed veterans totalled $910,000.

Communications.—The state in 1949 maintained a highway system of 6,213 mi., including 3,255 mi. of pavement and 2,958 mi. of gravel surface, at a cost of $5,153,376. There were 3,967 mi. of railroad in operation in 1949. Telephones in use Jan. 1, 1949, numbered 139,647, of which 39,673 were classified as rural.

Banking and Finance.—There were 35 national banks in operation on Dec. 31, 1948, with total assets of $275,856,000 and total deposits of $262,505,000. The 135 state banks and trust companies on June 30, 1949, had resources of $245,551,535 and deposits of $230,892,452. Nine building and loan associations on June 30, 1949, reported total resources of $5,018,610.

Total receipts for the state treasury for the fiscal year ending June 30, 1949, were $59,441,623; disbursements were $56,315,053. The bonded indebtedness was $17,199,000. Federal internal revenue collections for the same year totalled $64,055,105, of which amount $55,802,858 was derived from the income tax.

Agriculture.—Cash farm income for 1949 was estimated to be 19% below the 1948 figure of $645,995,000. Production of all the major crops declined considerably during the year, primarily as a result of midsummer drought and high temperatures during August.

Principal Agricultural Products of South Dakota

Crop	1949	1948	Average 1938–47
Corn, bu.	82,824,000	131,472,000	79,028,000
Wheat, bu.	34,276,000	50,391,000	37,530,000
Oats, bu.	67,988,000	104,252,000	77,963,000
Barley, bu.	14,958,000	34,914,000	33,186,000
Flaxseed, bu.	4,956,000	7,788,000	3,069,000
Potatoes, bu.	1,008,000	2,750,000	2,390,000
Hay, all, tons	2,939,000	3,443,000	2,939,000

Mining.—The total value of mineral substances produced in 1948 was $19,444,445. The state ranked second in gold production, valued at $13,224,750; second in bentonite, valued at $2,047,000; and third in feldspar, valued at $616,239. The state-owned cement plant produced 698,101 bbl. of cement, valued at $1,815,062. (H. S. S.)

Southern Rhodesia: *see* Rhodesia, Southern.

South-West Africa: *see* South Africa, The Union of; Trust Territories.

Sovereigns, Presidents and Rulers: *see* Presidents, SOVEREIGNS AND RULERS.

Soviet Union: *see* UNION OF SOVIET SOCIALIST REPUBLICS.

Soybeans. The 222,305,000-bu. U.S. soybean crop of 1949 was the second largest on record, only slightly less than the 223,006,000-bu. crop of 1948 and much in excess of the 1938–47 average of 148,381,000 bu. Harvested acreage in 1949 of 9,912,000 was low compared with 10,430,000 ac. in 1948, but above the ten-year average of 8,025,000 ac. Yields in 1949 were the highest on record at 22.4 bu. per acre. Illinois produced about one-third of the crop, 82,602,000 bu.; Indiana was in second place with 33,166,000 bu.; and Iowa followed with 28,778,000 bu.

Average prices received by farmers for soybeans fluctuated erratically during the year, although at levels far below the 1948 peak as the supply-demand situation in fats and oils eased materially. The average price to farmers for the 1949 crop was preliminarily estimated at $2.08 per bushel, slightly less than the government support price of $2.11 per bushel.

World soybean production in 1949, estimated at 501,700,000 bu., was 10% smaller than the record 1948 crop of 558,400,000 bu., but exceeded the 1935–39 average of 464,300,000 bu. China's production of 179,200,000 bu. was 15% less than in 1948, and the Manchurian crop of 66,000,000 bu. was less than half of the average prewar harvest. (J. K. R.)

Spaak, Paul-Henri (1899–), Belgian prime minister, was born on Jan. 25 in Brussels. He practised law in Brussels and was elected to the chamber of deputies as a Socialist. He joined Paul van Zeeland's cabinet as minister of posts and telegraphs in 1935 and was foreign minister a year later. He conducted the negotiations to secure Belgium's release from the Locarno and the Anglo-Franco-Belgian agreements, then believing that Belgium could remain neutral in the event of war. He was prime minister from May 1938 to Feb. 1939 and at the outbreak of World War II again became foreign minister. In May 1940, after the capitulation of the Belgian army, he went to France and later to England, where he became foreign minister in the Belgian government-in-exile. In Feb. 1945, he was retained as foreign minister in the Van Acker government, established in Brussels. He was elected president of the first general assembly of the United Nations (London, 1946).

Prime minister of a government formed from a Christian Social and Socialist coalition from March 19, 1947, he resigned after the election of June 26, 1949 (*see* BELGIUM). After the formation of a Christian Social and Liberal coalition government by Gaston Eyskens on Aug. 10, the following day Spaak was appointed minister of state by the regent. Also on Aug. 11, at Strasbourg, he was elected president of the first European assembly.

Spain. A country of southwestern Europe, Spain is bounded on the north by the Bay of Biscay and France, on the south and east by the Mediterranean. Area: 194,945 sq.mi., including Balearic (1,936 sq.mi.) and Canary Islands (2,804 sq.mi.). Pop. (1940 census): 25,877,971, (1948 est.) 27,761,000, including Balearic (1940 census: 407,497) and Canary Islands (680,294). Religion: mainly Roman Catholic. Chief towns (pop., 1947 est. if not otherwise stated): Madrid (cap., 1949 est., 1,440,041); Barcelona (1949 est., 1,500,000); Valencia (562,967); Seville (382,013); Zaragoza or Saragossa (292,965); Málaga (277,582); Murcia (226,702); Bilbao (220,333). Chief of state and prime minister: General Francisco Franco (*q.v.*).

History.—In a press interview at the end of Jan. 1949 Gen. Franco spoke of the United Nations as having been born in an atmosphere of passion and as having "employed Spain as a means of paying out appeasement money to the aggressors of the future." Until the international climate became more propitious, Spain was not interested in whether or not it was admitted to membership. Although a share in the European Recovery program would naturally be welcome, it had made no approaches whatever in this sense, either direct or indirect, to the United States. Gibraltar, though now of little military value, would always, while it remained British, constitute a shadow in Anglo-Spanish relations. Gen. Franco would make no statement about the prospect for a restoration of the monarchy and held out scant hope of an early return to parliamentary democracy.

KING ABDULLAH of Jordan (left) and Gen. Francisco Franco (centre) reviewing a military parade during Abdullah's visit to Spain in Sept. 1949

The Security council of the U.N. approved on April 28 by ten votes to none, U.S.S.R. abstaining, an Australian resolution for the appointment of a subcommittee of five to enquire into the complaint that the Franco regime had led to international friction and was a threat to international peace and security and to suggest practical measures for ending it: Australia, Brazil, China, France and Poland were chosen. In May a motion to restore to member states of the U.N. full freedom of action in their diplomatic relations with Spain was carried in the political committee by 25 votes (chiefly Latin American and Arab) to 16, with 16 abstentions but failed by four votes to get the necessary two-thirds majority in the full assembly, where the voting was 26 to 15, again with 16 abstentions, among them Great Britain, France and the U.S. The consulates general in Barcelona of Brazil, Peru and Bolivia, the three states which, with Colombia, had tabled the resolution, were simultaneously damaged by bombs on May 15. A Polish resolution proposing sanctions was lost by 6 votes to 40, 7 abstaining.

Diplomatic relations between Spain and Venezuela had been renewed in April, when notes to the same purpose were exchanged with Liberia.

On May 18, in a long opening address to the third legislative session of the *cortes* (parliament) in Madrid, Gen. Franco accused Great Britain of having failed to keep promises made to Spain in 1941 that after the war Great Britain would further Spanish territorial claims in North Africa at the expense of France, and further alleged an Anglo-American intention in 1944 to open the second front in the Iberian peninsula, which was only defeated by "soviet realism." Gen. Franco stated that he was not greatly interested in the countries of Europe, which were driving Spaniards "in the direction where our heart impels us—to Hispanic America." But, "if our hearts lead us toward Spanish America, the force of reality impels us toward North America."

Authorized by the state department in May to negotiate directly with the Export-Import bank for a government loan, Spain, represented by Andrés Moreno, director of the Banco Hispano-Americano, was reported to have asked in Washington for $1,250,000,000, or $400,000,000 more than the bank's entire treasury assets. The application was refused. Earlier, in February, the Chase National bank of New York had granted a short-term loan of $25,000,000, the first substantial credit advanced to Spain by a U.S. commercial bank for many years. Four-fifths of the loan was to go to buying the U.S. out of the Spanish telephone system.

The Spanish government had been consulted by Portugal in March concerning the invitation to the latter to adhere to the North Atlantic treaty, such consultation being called for by the treaty of friendship and non-aggression of 1939 and the protocol to this of 1940, and had intimated that it raised no objection. King Abdullah of Jordan paid a fortnight's visit to Spain in September. An official statement issued jointly by the foreign ministers of the two countries at the conclusion of the visit recorded complete agreement on the seriousness of the menace of communism to world peace.

The statutes of the council of the kingdom created by the law of succession of July 26, 1947, were published by decree on Jan. 1. This supreme consultative body of 14 members—seven *ex-officio* (the president of the *cortes*, the senior prelate in the *cortes*, the senior captain general, the senior general in the *alto estado mayor* of the forces, the president of the council of state, the president of the supreme tribunal of justice and the president of the Institute of Spain), four elected by the *cortes* and three nominated by the chief of state, with the president of the *cortes* as chairman—was to advise the chief of state in major matters of his exclusive competence such as the declaration of war or making of peace, the choice of a successor as head of the state, abdication of any kind, royal marriages and the depriving of royal personages of any rights of succession on grounds of lack of capacity or "notorious deviation from the fundamental principles of the state."

Elections for the provincial *diputaciones* were held on March 20, candidates being chosen partly from representatives of the town councils, partly from economic, cultural and professional corporations. New facilities for crossing the Gibraltar frontier were announced in May.

Spain's internal economy suffered greatly from a drought even more severe than those of the two previous years, householders and public services being among those affected by the repeated and prolonged water and electricity cuts. Catalan industry was particularly handicapped by the hydroelectric shortages, as too by reduced imports of raw cotton and other materials. Lack of fertilizers and tractors combined with the drought to weigh heavily on agriculture, the grain harvest falling short of consumption needs by 1,500,000 tons.

In the Canary Islands the summer was marked by a series of severe volcanic eruptions on La Palma. Streams of lava, that formed a substantial promontory in the sea, cut off an area in the south of the island and caused several villages to be evacuated. The shocks continued for six weeks, as many as 80 tremors being registered in one day.

National expenditure for 1950 was estimated in November at 17,941,000,000 pesetas and revenue at 17,848,000,000 pesetas. The raising of a loan was authorized to cover the deficit. In a press interview Gen. Franco stated that Spain's internal economic needs were not great but that assistance was necessary for defense purposes.

The first entirely Spanish-built transport aircraft made its trial flight in March. A new type of "articulated train," the invention of a Basque military engineer, Alejandro Goicoechea, was on test during the summer after undergoing preliminary trials in the U.S.

A new one-year trade program between Spain and Great Britain, concluded in June, envisaged some increase in value of trade between the two countries and an easing of conditions. Acceleration in the import of U.K. manufactured goods and in financial-debt transfers was announced in December after further discussions of outstanding trading difficulties.

An agreement was signed with the Benelux countries in April for a trade exchange totalling about 1,500,000,000 Belgian francs, Spain to receive electrical plant, rolling stock and heavy industrial equipment against Spanish manufactured goods and other products. A trade treaty was also concluded with Denmark in May; and in June the trade and payments agreement with France was renewed for a further year, French exports to include coal, phosphates, rolling stock and electrical plant equipment. Following on the devaluation of sterling, Spain decided in October to maintain its basic exchange rate at 10.95 pesetas to the U.S. dollar. (W. C. AN.)

Education.—State schools (1946–47) 54,055, pupils 4,359,230, teachers 55,077; secondary schools (1947) 118, pupils 203,136; training colleges for elementary teachers (1947) 53, students 25,928; universities (1947) 12, students 42,597, professors and lecturers about 3,000. Illiteracy (1947): 20.8%.

Transport and Communications.—Roads (1949): 75,000 mi. Licensed motor vehicles (Dec. 1948): cars 94,654, commercial vehicles 58,187. Railways (1947): 10,920 (7,950 government owned) mi.; passenger traffic (government-owned lines) 109,503,212. Shipping (July 1948): number of merchant vessels of 100 tons and upwards 1,084; total tonnage 1,155,267. Telephones (Dec. 1947) 481,929.

Finance and Banking.—Budget (1947, actual) revenue 12,964,000,000 pesetas, expenditure 14,223,000,000 pesetas; (1948 est.) revenue 15,115,000,000 pesetas, expenditure 15,196,000,000 pesetas. National debt (Jan. 1948): 52,953,000,000 pesetas. Currency circulation (Aug. 1949): 25,300,000,000 pesetas. Gold reserve (Aug. 1949): $85,000,000 U.S. Bank deposits (June 1949): 32,000,000,000 pesetas. Monetary unit: peseta with a basic exchange rate (Dec. 1949) 10.95 pesetas to the U.S. dollar.

Foreign Trade.—Imports (1948) 1,439,000,000 pesetas; exports (1948) 1,106,000,000 pesetas. Principal imports: wheat, machinery and vehicles, raw cotton, fuel and bananas. Principal exports: oranges, tomatoes, cotton goods and iron ore and pyrites.

Agriculture and Fisheries.—Main crops (in metric tons, 1948): wheat 3,266,000; barley 1,742,000; oats 550,000; rye 508,000; maize 560,000; potatoes 3,000,000; rice 272,000; cottonseed 12,000; sugar, raw value, 265,000; cotton, ginned, 6,000; wool on greasy basis, 35,000; tobacco (leaf) 13,800. Olives (1946) 2,070,000 metric tons; oranges and lemons (1947) 876,000 metric tons. Livestock (1947): cattle 3,100,000; sheep 24,120,000; pigs 5,000,000; horses 600,000; mules 1,080,000; asses 800,000; goats 6,100,000; fowls (1945) 22,876,000. Fisheries: total match (1947): weight 567,841 metric tons; value 2,032,000,000 pesetas. Production (1948): wine 14,200,000 hectolitres; olive oil (1947) 362,000 metric tons.

Industry.—Fuel and power (1948): coal 10,410,000 metric tons; lignite 1,394,000 metric tons; manufactured gas 8,257,000 cu.ft.; electricity 6,110,000,000 kw.hr. Raw materials (in metric tons 1948): iron ore, metal content, 1,632,000; pig iron 517,000; steel ingots and castings 548,000; black and blister copper 8,900; lead 22,000; zinc 21,200. Other products (in metric tons): rock salt (1947) 265,000; potash ore (1947) 622,000; cork (1946) 70,000; paper (1946) 165,000. Cement production (1948) 1,646,000 metric tons.

FILMS OF 1949.—*Iberian Peninsula; Spanish Children* (Encyclopædia Britannica Films Inc.); *Spain: The Land and the People* (Coronet Instructional Films).

Spanish-American Literature.

Three factors continued in 1949 to impede the fullest development of creative literature in Spanish America: (1) the high price of publishing books, greatly increased by postwar inflation; (2) political instability which had made the position of the writer insecure and in many cases had driven him into exile; (3) the increasingly evident preference of the reading public for translations of European and North American authors rather than for original works by Spanish-American writers. In spite of these discouraging facts good books continued to appear in Spanish-speaking America.

While a few of the older and established generation of novelists continued to write, 1949 saw the publication of a number of works of fiction by newer writers of diverse tendencies. Among the former, two Mexican novelists of recognized reputation produced praiseworthy works: *Sendas perdidas* by the veteran Mariano Azuela, and *Cabello de elote* by Mauricio Magdaleno, whose *Sunburst* was already known to the English-speaking world in translation. Other distinguished novels of the year included *En medio del camino de la vida,* an autobiographical tale by the Colombian essayist Germán Arciniegas; *El Reino de este mundo,* a beautifully conceived novel of Haitian folklore by the Cuban author Alejo Carpentier; and Marta Brunet's poetic work, *Raíz del sueño,* which continued the Chilean novelist's tradition of fine style.

Less striking but of considerable value in tracing the complex development of the novel in Spanish-speaking countries were the following: *Fogarada,* by Enrique González Rincones, a story of the Venezuelan oil fields; *Una Noche en Acapulco,* by the Mexican Rodolfo González Hurtado, in which adventure and fantasy combine in agreeable proportions; *El Holandés volador,* a whimsical treatment of an old theme by the Chilean Ernesto Silva Román; *La Fuga de la quimera,* an imaginative tale by the prolific Mexican littérateur Carlos González Peña; *Aventuras de un bracero,* an interesting account of the life of a Mexican itinerant labourer in the United States by Jesús Topete; *Evocación,* a novel of the older local-colour tradition by a Venezuelan, Pedro César Dominici.

The short story and novelette figured prominently in the year's literary output. Two Argentine collections, *Los Usurpadores* by Francisco Ayala and *El Aleph* by Jorge Luis Borges, were of exceptional interest because of their urbane and somewhat satirical subtlety. Also in the imaginative tradition were tales entitled *Los Cuentos que Nueva York no sabe,* by the Dominican author Angel Rafael Lamarche. Considerably more earthy were the stories of two young Venezuelans, Manuel Trujillo, *Cuatro cuentos rurales,* and Ramón Díaz Sánchez, *La Virgen no tiene cara y otros cuentos.*

As usual it was impossible to keep account of the hundreds of books of poetry which appeared in 1949. Two among them were of unquestioned importance: *Sonetos,* by the brilliant Mexican poet and statesman Jaime Torres Bodet; and *Poesías completas,* the collected works of the much-lauded Peruvian César Vallejo. Colombia, long the home of famous poets, produced among many other volumes of verse an *Antolología de la nueva poesía colombiana,* representing the experimental work of about 37 moderns, and *La Poesía en el Valle del Cauca,* which included excellent samples of the older and of contemporary regional verse.

Not since colonial days had the drama been a thriving genre in Spanish America, and 1949 provided no exception to the rule. Two dramas might be mentioned as indicative of tendencies: "*. . . de campanario o de Macolatlán,*" a three-act poetic play by a Mexican author J. Jesús Castorena; and a volume of two plays by an older Venezuelan writer Pedro César Dominici: *El Hombre que volvió* and *La Casa,* both of which showed somewhat romantic and old-fashioned characteristics.

Among biographies written by Spanish-American authors the following were noteworthy: *Sarmiento y su americanismo,* by the Cuban scholar Emeterio Santovenia; *El Misterioso almirante y su enigmático descubrimiento,* a novel interpretation of the personality of Christopher Columbus by Carlos Brand (Venezuelan); *De mi vida y otras vidas,* autobiographical recollections of the grand old man of Colombian letters, Baldomero Sanín Cano; and a new appraisal of the life of Juan Manuel Rosas by the Argentine novelist Manuel Gálvez.

The year was notable for the appearance of a number of outstanding works of literary criticism, the majority of which were published in Mexico. Of superior quality was *Las Corrientes literarias en la América Hispánica,* by the recently deceased Pedro Henriquez Ureña. Leopoldo Zea's *Romanticismo y positivismo* was a stimulating study of philosophical and literary trends in the 19th century. Students of contemporary Mexican literature appreciated José Luis Martínez's scholarly *Literatura mexicana: siglo XX,* and the systematic student found Julio Caillet-Bois's *La Literatura hispanoamericana,* published in Buenos Aires, Arg., a comprehensive guide. Two notable volumes concerning *modernista* poetry were Arqueles Vela's *Teoría literaria del modernismo* and Manuel Serrano Blanco's *Guillermo Valencia.* Important studies of regional literature included Rubén Sueldo Guevara's *Panorama actual de la literatura Cuzqueña,* Alfonso de Alba's *La Provincia oculta* (Mexican) and Francisco Key Ayala's *Bajo el signo del avila* (writers of Caracas, Venez.).

The list of critical works on national literatures was enriched with the publication in 1949 of José A. Fernández de Castro's *Esquema histórico de las letras en Cuba (1548–1902)* and Pedro Díaz Seijas's *Orientaciones y tendencias de la novela venezolana.*

A number of the more important literary landmarks of 1949 would be classified as essays or general works, and in them one often found Spanish-American writers at their best. Félix Lizaso's *Panorama de la cultura cubana* provided an excellent survey of a relatively unknown field. *El Problema del indio en América,* by Aída Cometta Manzoni, whose previous studies of the Indian in literature had given her authority, was an illuminating series of five essays. Vincente Sáenz's *Hispanoamérica contra el coloniaje* exemplified in a polemic vein the intense nationalism of contemporary Latin America, and *El Futuro de América* by an Ecuadoran Juan Yépez del Pozo dealt with similar themes. Two volumes of art history were outstanding: Manuel Toussaint's *Arte colonial en México,* and José María Vargas' *El Arte Quiteño en los siglos XVI, XVII y XVIII.*

The quantity and quality of essays on folklore constituted a noteworthy characteristic of the 1949 production of books. Representative of this type of literature were *Música y danzas del Ecuador,* by Segundo Luis Moreno; *El Valor sociológico del folklore y otros ensayos,* by Lucio Mendieta y Núñez; *Cultura y folklore en América,* by E. de Gandía; and *Cantos del Valle de Tenza* (Colombia), compiled by Joaquín R. Medina.

(J. T. R.)

Spanish Colonial Empire. Under this heading are grouped the Spanish possessions in Africa. Their total area is approximately 134,763 sq.mi. and the total population (1948 est.) 1,537,000. Certain essential information on the territories composing the empire is given in the table.

History.—The wedding of Muley Hassan Ben el Mehedi, the khalifa (viceroy) of the Spanish zone of Morocco to his second cousin, daughter of the former Sultan Abd-el-Aziz, in June 1949 was celebrated by three weeks of festivities described as on an Arabian Nights scale, that cost about 11,000,000 pesetas. Lieut. Gen. Juan Varela, the Spanish high commissioner, presented the khalifa with a check for 1,000,000 pesetas from General Franco. The khalifa and General Varela travelled to Granada in September to meet King Abdullah of the Hashemite Kingdom of Jordan, who placed on record his appreciation

Spanish Colonial Empire

Country	Area (in sq.mi.)	Population (1948 est.)	Capital and Status	Foreign Trade	Transport and Communications	Budget
Spanish Morocco	17,631	1,140,000 (incl. 62,438 Spaniards and 14,734 Jews)	Tetuan; protectorate; *High commissioner:* Gen. Juan Varela; *Khalifa (viceroy of the sultan of Morocco):* Sidi Muley Hassan Ben el Mehedi	(all possessions, in gold pesetas) (1945) imp. 125,383,000 exp. 197,736,000 (1946) imp. 150,307,000 exp. 217,379,000	roads c. 500 mi. railway 80 mi. shipping (1943) entered 307,379 net registered tons	rev. and exp. (1938) 111,000,000 pesetas (1947) 211,000,000 pesetas
Ceuta, Melilla, Alhucemas, Chafarines and Peñon de Velez	82	156,000	administered as part of Spain			
Ifni territory	741	42,000	administered as part of Spain		—	—
Spanish Sahara:						
Rio de Oro	73,362	36,000*	Cabo Yubi; colony		—	—
Sekia el Hamra	32,047					
Spanish Guinea, including Fernando Po, Rio Muni and four small islands	10,900	173,000	Santa Isabel; colony		—	(1943) rev. 22,300,000 pesetas exp. 23,600,000 pesetas

*Excluding nomads.

of Spain's conduct of affairs in Morocco. Among the bases of Spanish policy, as enumerated by General Franco in his opening speech to the Madrid *cortes* in May, were "friendship and affection" for the Arab peoples. The Spanish government placed a number of aircraft at the disposal of Moslems for their pilgrimage to Mecca. (W. C. An.; X.)

Spanish Literature.

Though some of the best critical work of the year 1949 came from Spaniards living abroad (*e.g.*, Pedro Salinas' study of *Rubén Darío*, Enrique Moreno's of *Guzmán de Alfarache* and Joaquín Casalduero's of *Don Quijote*), there was also much activity in Spain. A valuable linguistic study was M. Criado de Val's *Sintaxis del verbo español moderno.* The middle ages were represented by the first volume of Martín de Riquer's *La Lírica de los trovadores,* E. Alarcos' *Investigaciones sobre el libro de Alexandre* and José Romeu Figueras' *El Mito de "El Comte Arnau."* Outstanding works on the 16th century were E. Segura Covarsi's *La Canción petrarquista en la lírica española del Siglo de Oro,* Rafael Lapesa's *La Trayectoria poetica de Garcilaso* and Ramon Carande's *Carlos V y sus banqueros: La Hacienda real de Castilla.* Figures in the Romantic era who received full-length studies were La Avellaneda (M. Ballesteros), Nicomedes Pastor Díaz (E. Chao Espina), Gregorio Romero Larrañaga (J. L. Varela) and Vital Aza (N. Alonso Cortes). Of the moderns, Federico Garcia Lorca was the subject of a monograph by G. Díaz-Plaja, and R. Gullón and J. M. Blecua wrote on *La Poesía de Jorge Guillen.* Two notable events in Madrid were the compilation of a series of "Homenaje" volumes celebrating the 80th birthday of Ramón Menéndez Pidal, and the foundation of the Instituto de Humanidades by José Ortega y Gasset and Julián Marías; a course given there by the latter was published as *El Método histórico de las generaciones.* The *Revista de Occidente* published a comprehensive *Diccionario de literatura española.*

Foremost among the year's novels were S. J. Arbó's *Sobre las piedras grises,* awarded the Premio Nadal, J. A. de Zunzunegui's *La Ulcera* (Premio Nacional de Literatura), Benjamin Jarnés' *Eufrosina,* Enrique Azcoaga's *El Empleado* and the *Doña Juana la Loca y otras seis novelas superhistóricas* of Ramón Gómez de la Serna, who returned to Spain. Collections of verse included Leopoldo Panero's *Escrito a cada instante,* Luis Rosales' *La Casa encendida,* Leopoldo de Luis' *Los Imposibles pájaros* and José María Valverde's *La Espera.* The 1949 Premio Lope de Vega for drama was awarded to Antonio Buero for his *Historia de una escalera.* Notable new literary reviews were *Alcantara* (Extremadura), *Alma* (Madrid) and *Proel* (Santander). Literary men elected to the Spanish Academy of the Language were Vicente Aleixandre and Salvador González Anaya. (E. A. P.)

Special Libraries Association: *see* LIBRARIES.

Spices.

Pepper prices during 1949 reflected the scarcity of this commodity in the world markets. Prices at Rotterdam, Neth., London and New York city ranged up to $1.42 per pound for black pepper and $2.40 per pound for white pepper. Supplies from Indonesia, normally the largest source, continued to be shut off, but India, with a larger crop than usual, maintained a well-exploited monopoly and in November raised the export tax to about 12 cents per pound. Imitation pepper made by grinding grain with cayenne and esculent oils reappeared on the market to ease the situation.

The United States and Canada reported good harvests of mustard seed, while European production was reduced to make more land available for the planting of root crops and cereals. China did not report its crop, which at times had exceeded 11,000,000 lb. from provinces which had fallen under Communist control.

Dry weather and labour problems shortened production of ginger and caused prices to rise 350% above normal; plans were laid for larger plantings in Jamaica, Sierra Leone, India and Nigeria, the principal sources of supply.

Batavia, Korintje and Saigon varieties of cassia (cinnamon) were obtainable from Indonesia and Indo-China despite continued warfare during 1949. In China the harvesting of the different varieties of cassia continued, distribution being effected through British-controlled Hong Kong.

Madagascar and Zanzibar cloves were available during the year but shipments were smaller because of unfavourable conditions. Prices exceeded those of 1948. Shipments of nutmegs and mace from certain East Indian Islands were uninterrupted. A fine crop in Grenada (British West Indies) balanced supply with demand.

Production of red pepper (chilies) was less than normal and prices were high. The scarlet Hontaka and Takanotsume pods reappeared from Japan, at prices up fourfold. Cayenne from Africa sold at high prices as did Mexican "Anchos" for chile con carne.

Yugoslavia and Chile exported fine-quality paprika, supplementing Spanish and Portuguese supplies, and prices were moderate.

The world supply of herbs was affected by political disturbances in Europe, principally in Yugoslavia, the source of the preferred sage (*Salvia officinalis*). Bay leaves posed a dilemma, satisfactory quality (*Laurus nobilis*) being obtainable only from Greece, where the crop was neglected.

Supplies of caraway, poppy, dill, coriander and cummin seeds were available from Europe and North Africa. Sesame had become a successful crop in Nicaragua.

Tumeric, formerly obtainable only from India, was test-cultivated in Jamaica and Haiti, and substantial shipments reached the U.S. in 1949. Production was stimulated by the high price of the Indian product, which was more than 80%

above normal.

Saffron, the world's most costly spice, dropped from the usual range of from $45 to $75 per pound to $17 per pound on the Spanish market. Three stigmas of the saffron flower, hand removed from about 75,000 blossoms, constitute a pound. This spice is very popular in the cooking of certain Spanish dishes. (C. A. T.)

Spirits: *see* LIQUORS, ALCOHOLIC.

Spitsbergen: *see* NORWAY.

Sports and Games: *see* ANGLING; ARCHERY; BADMINTON; BASEBALL; BASKETBALL; BILLIARDS; BOWLING; BOXING; CANASTA; CHESS; CONTRACT BRIDGE; CRICKET; CURLING; CYCLING; FENCING; FOOTBALL; GLIDING; GOLF; GYMNASTICS; HANDBALL; HORSE RACING; ICE HOCKEY; ICE SKATING; LACROSSE; LAWN BOWLING; MOTOR-BOAT RACING; POLO; ROWING; SHOOTING; SKIING; SOCCER; SOFTBALL; SQUASH RACQUETS; SWIMMING; TABLE TENNIS; TENNIS; TRACK AND FIELD SPORTS; WRESTLING; YACHTING.

Squash Racquets.

Hunter Lott, Jr., of the Merion (Pa.) Cricket club captured the national singles squash racquets championship by defeating Donald Strachan of the Princeton club of New York, 15–12, 15–14, 12–15, 17–14. Lott combined with G. Diehl Mateer, Jr., another Merion representative, to take the doubles.

George Waring, Boston, Mass., retained the veterans' singles title, and the intercollegiate crown was retained by Mateer, who represented Haverford college, Haverford, Pa. Other major winners during 1949 included Eddie Reid, Hartford, Conn., national professional; Calvin MacCracken, Princeton club, New York State; and Ed Hahn, Detroit, Mich., Western.

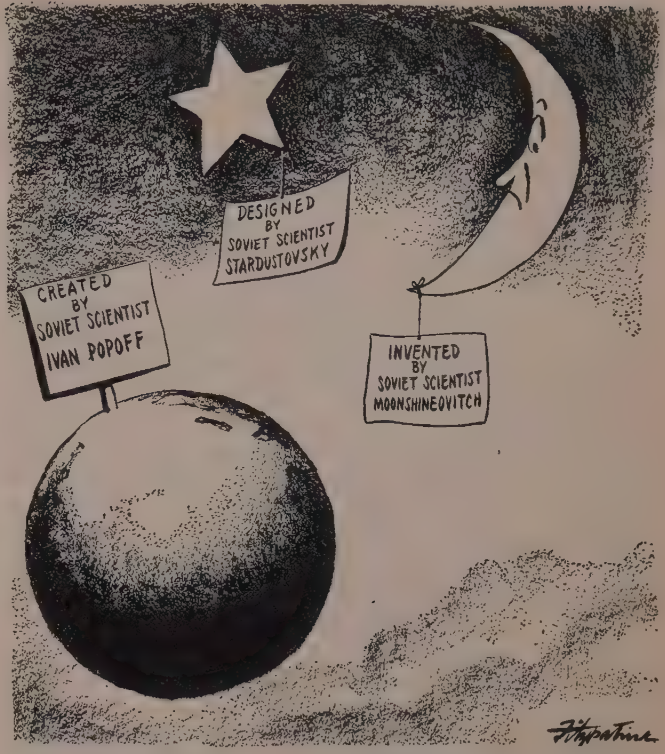
U.S. representatives won the Grant trophy, but the Lapham trophy was returned to Canada when the dominion team triumphed 7–3.

A strong British women's team visited the United States. Janet Morgan, Surrey, Eng., won the national singles championship, and teamed with Mrs. R. J. Teague, Devonshire, Eng., to take the doubles honours. Miss Morgan also won the New England States crown. The U.S. women's team regained the Wolfe-Noel cup, however, by halting the invaders, 3–2, in their first meeting since 1939.

Betty Howe, New Haven, Conn., proved one of the year's big stars, annexing the Atlantic Coast, Pennsylvania, New York State and Connecticut State Women's championships. (T. V. H.)

Stalin, Joseph Vissarionovich

(1879–), soviet prime minister, was born on Dec. 21 at Gori, Georgia, in Transcaucasia. He studied for the priesthood and entered the Tiflis Orthodox seminary in 1893, but was later expelled (see *Encyclopædia Britannica*). He became active in the revolutionary underground in Georgia and, between 1902 and 1912, was arrested and deported five times, but each time escaped. In March 1913 he was deported to the Turukhansk district in northern Siberia, where he remained until Feb. 1917. Returning to St. Petersburg (now Leningrad) he became one of the members of the Politburo of the Communist party. After the Communist *coup d'état* of Nov. 7, 1917, he was appointed people's commissar for nationalities. In 1922 he became general secretary of the central committee of the party. Soon after Nicolai Lenin's death (Jan. 21, 1924), Stalin rose to pre-eminence in the party machine, and by 1937 his position as dictator of soviet Russia was unquestionable, although he did not hold state office until May 6, 1941, when he assumed the post of prime minister. On July 19, 1941, after the German attack, he appointed himself commander in chief and minister of the armed forces, and in March 1943 he assumed the rank of marshal of the Soviet Union.


DESIGNED BY SOVIET SCIENTIST STARDUSTOVSKY
CREATED BY SOVIET SCIENTIST IVAN POPOFF
INVENTED BY SOVIET SCIENTIST MOONSHINEOVITCH

"AND ON THE SEVENTH DAY STALIN RESTED," cartoon comment by Fitzpatrick of the *St. Louis Post-Dispatch* on the growing number of inventions and discoveries being claimed for soviet scientists in 1949

During World War II Stalin met the leaders of Russia's wartime allies at Tehran (Nov. 1943), Yalta (Feb. 1945) and Potsdam (Berlin) (July 1945). On March 3, 1947, he resigned as minister of the armed forces, retaining the post of prime minister.

On Jan. 30, 1949, Marshal Stalin published his answer to four questions put to him by a U.S. news agency. He said that the soviet government was prepared to consider the publication of a joint soviet-U.S. declaration that the two governments had no intention of resorting to war against each other; that the U.S.S.R. was prepared to take measures toward gradual disarmament; that the U.S.S.R. saw no obstacles to the lifting of transport restrictions between Berlin and the western zones of Germany provided the U.S., Great Britain and France simultaneously removed transport and trade restrictions between the western and the soviet zones and pending a meeting of the Council of Foreign Ministers to consider the German problem; and that he was ready to meet Pres. Harry S. Truman to discuss these matters. On Oct. 13 he sent a message to Wilhelm Pieck, president, and Otto Grotewohl, prime minister of the German Democratic Republic, in which he expressed the opinion that the German and soviet peoples possessed "the greatest potential in Europe for accomplishing great actions of world importance." Dec. 21, his 70th birthday was celebrated throughout the U.S.S.R and the soviet-dominated states with extraordinary pomp and circumstance. (*See* also UNION OF SOVIET SOCIALIST REPUBLICS.)

Stamp Collecting: *see* PHILATELY.

Standards, National Bureau of.

Established by act of congress, March 3, 1901, this bureau is the principal agency of the federal government for basic research in physics, mathematics, chemistry and engineering. During 1949, it consisted of 21 divisions and offices: 13 scientific divisions (electricity and optics, metrology, heat and power, atomic and molecular physics, chemistry, mechanics, organic and fibrous materials, metallurgy, mineral products, building technology, applied mathematics, electronics and radio propagation); a division of commodity standards; 4 administrative divisions (budget and management, personnel, shops and plant); and 3 offices (scientific publications, international relations and weights and measures).

One portion of the bureau's work has to do with basic scientific standards and measurements. The fundamental measurements in science, industry and commerce are time, mass and length, and the year witnessed the most radical developments in these fields in history. These developments grew out of a broad program designed to establish basic measurements on fundamental, unchanging properties of matter rather than on arbitrary conventions. The measurement of length has been based on the standard metre; an ultimate standard in the green radiation of the atoms of mercury 198 was achieved more than a year before. During 1949, time was placed on an absolute atomic basis while it appeared likely that mass, too, would be linked to an atomic standard as a result of the measurement of the magnetic moment of the proton.

The atomic clock developed by the bureau is controlled by the constant frequency of the vibrations of atoms in the ammonia molecule. Invariant with age and independent of astronomical observations, the clock promised to surpass by one or two orders of magnitude the accuracy of the existing primary standard (the rotating earth).

The bureau's determination of the proton moment in absolute units was the first of its kind. Combined with other data, the determination also gave a precise absolute value of the electron-charge-to-mass ratio (e/m). The development also makes possible a convenient secondary standard for measuring the absolute value of magnetic fields. In the past, measurements involving magnetic and electric fields have been limited by the low accuracy of magnetic measurements: these can now be made with even greater accuracy than past measurements of electric fields. It is the new, precise, absolute of e/m which affords a basis for an atomic standard of mass, for the electron charge (e) can be determined with great accuracy, providing a method for calculating the mass (m) with unusual precision.

Basic investigations related to scientific constants, standards and measurements included the following: instrumentation for measurement of audio-frequency voltages with precision (1 part in 10,000), magnetic permeameter for absolute measurement of magnetizing forces up to 300 oersteds, calibration system for the speed markings of camera lenses, impedance measurements with slotted coaxial lines, field-intensity standards for VHF (very high frequency) radio waves, quartz-crystal frequency standards, electrodynamic radio-frequency ammeter (designed to serve as a primary standard), sensitive microwave instrumentation for determination of dielectric constants of substances and so on.

In electronics new and highly specialized types of circuits and devices were developed. Work continued on the design of smaller, lighter, stronger assemblies, which involved further studies of printed circuits, of the structural performance of tubes and of the properties of materials in tubes and other components.

The long-range program on electronic digital computers, undertaken in co-operation with the Office of Naval Research, bureau of census, and departments of the army and air force, showed progress in the design and initial construction phases of five machines under contract to industry while two machines under construction at the bureau were in the final stages. These two machines were to be put into operation early in 1950, one in the bureau's Washington laboratories, the other at its Institute for Numerical Analysis on the west coast.

A varied program of research on the properties of matter at extremely low temperatures was pursued. At the temperature of liquid helium, metals such as lead and tin, ordinarily poor conductors of electricity, become superconductors, completely losing their electrical resistance. As part of this program, the unusual properties of helium II near absolute zero were studied. This state of helium constitutes a fourth state of matter, in which heat is transmitted as a kind of wave motion analogous to sound and called, therefore, second sound. The experimental work yielded values for the velocity and attenuation of second sound. Other investigations included the determination of the effect of current density on the transition of a conductor from the superconducting to the normal state, the behaviour of superconductors at microwave frequencies, and the interaction between a magnetic field and the surface currents it sets up in a superconductor.

Considerable advances were achieved in the bureau's aeronautic work. For example, a vacuum-tube accelerometer for use in aircraft and biochemical research was developed. A sky compass, based on the studies of A. H. Pfund, was devised for aerial navigation in the polar regions during the long periods when neither the sun nor the stars can be used. In these regions the magnetic compass also loses its value. The sky compass is effective here because it determines the direction of the sun by analysis of the polarized light from the sun, even though the sun itself is not visible. Other projects included optical components for supersonic wind tunnels, thermal properties of wind-tunnel and jet-engine gases, telemetering equipment for studies of parachute design, landing impact vibration, airflow at the surface of an airfoil and air turbulence at supersonic speeds.

The above projects represent only a small portion of the year's work, suggesting its nature and scope. Similar work was conducted in other fields of the physical sciences. In addition to particular research projects, the bureau conducted necessary research and development in the fields of scientific standards and measurement methods, the determination of physical constants and techniques for testing materials. Standard measuring apparatus and reference standards were tested and calibrated; specifications for federal supplies were formulated; and advisory services were rendered on scientific matters to other agencies of the federal government, state and municipal governments and industry. Major programs related to the national defense constituted an important part of the work. Here ordnance electronics and guided missiles were typical, but details on these and similar programs were necessarily classified.

An increase of more than 50% occurred in the bureau's testing, calibration and standard samples activities. More than 380,000 tests and calibrations, having a fee value of about $1,400,000, were performed while more than 20,000 standard samples were prepared and sold. The range of test work included the testing of 5,500 light bulbs (a sampling of the 4,000,000 purchased by the government), testing and certification of 2,000 radium preparations and the sample-testing of 7,000,000 bbl. of cement.

The results of the bureau's work were made available through three monthly periodicals (*Journal of Research, Technical News Bulletin* and *Basic Radio Propagation Predictions*) and several series of nonperiodical publications (Applied Mathematics Series, Building Materials and Structures Series, circulars and handbooks). An indexed list of publications (Circular 460, 375 pages) was compiled and was available from the superintendent of documents, U.S. government printing office, Washington 25, D.C. (H. Od.)

Stars: *see* Astronomy.

State, U.S. Department of: *see* GOVERNMENT DEPARTMENTS AND BUREAUS.

State Guard: *see* NATIONAL GUARD.

Steel: *see* IRON AND STEEL.

Stellar System: *see* ASTRONOMY.

Stocks and Bonds.

U.S. Stocks.—The U.S. stock market of 1949 was inactive in volume of trading, unusually steady throughout the year as to the average price level and extraordinarily unresponsive to either good or bad news. Alternate bear and bull movements—only two in number, involving a bear market during the first half of the year and a moderate recovery during the second half—were unusually small in extent. For 90 stocks combined, representing the railroad, industrial and public utility groups, the December average price level stood at 131.6, as compared with 121.9 for January, and with 120.6 and 117.7 for December and January of 1948. Briefly summarized, the 1949 price level seemed to indicate a slight bear market in certain groups of stocks, and a slight bull market in others, but without any definite momentum for future forecasting. (*See* Table I.)

Table I.—*U.S. Security Market Prices*

	Railroads 20 stocks		Industrials 50 stocks		Public Utilities 20 stocks		*Copper 7 stocks		Stocks 90 stocks	
	1949	1948	1949	1948	1949	1948	1949	1948	1949	1948
Jan.	43.2	43.6	151.7	145.5	68.6	68.6	128.1	115.1	121.9	117.7
Feb.	40.2	41.6	145.2	138.2	69.3	65.6	116.7	108.2	117.3	112.0
March.	39.6	42.5	146.7	140.1	70.5	66.4	111.1	116.5	118.4	113.6
April	39.5	46.8	146.1	151.4	71.8	69.1	105.7	132.3	118.3	122.3
May	38.8	50.2	144.6	158.6	72.7	72.2	103.3	136.2	117.4	128.3
June	35.8	51.0	136.2	165.8	70.3	74.0	98.9	142.0	110.9	133.6
July	36.7	50.6	144.9	161.5	72.3	72.8	107.3	140.2	117.2	130.4
Aug.	38.3	48.7	149.8	156.8	75.6	70.7	109.1	137.0	121.4	126.6
Sept.	38.6	48.7	151.4	154.7	77.8	70.6	105.4	134.3	123.0	125.1
Oct.	39.5	49.1	155.6	159.6	79.1	71.1	109.6	139.1	126.2	128.6
Nov.	39.2	44.4	158.0	151.0	79.8	67.5	113.6	130.9	127.9	121.4
Dec.	41.0	43.1	162.3	150.5	81.6	66.1	114.9	129.4	131.6	120.6

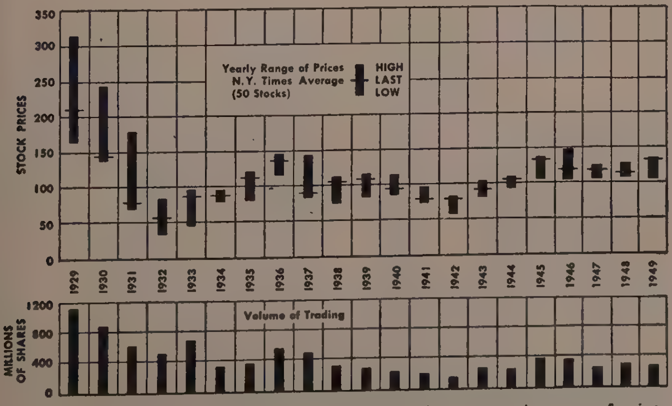
*1935-39 base period; all other figures use 1926 as a base period.
The above figures are an average for the month based on daily closing prices, except for copper, which are weekly closing prices.
By courtesy of Standard and Poor's Weekly Corporate Bond Price Indexes.

Corporate dividends, with the exception of certain limited groups like the amusement, food products and mining stocks, showed an increase of 8.2% in total dividend distribution during 1949 as compared with 1948. As was the case in 1948, most groups of corporations except the rails managed to adjust themselves fairly well, through price increases and improved productive efficiency, to the large successive wage increases won by labour in 1947–49. The entire year was marked by inflation thinking and a rather marked degree of market pessimism regarding the actions of U.S. labour and the gloomy developments in Europe and Asia. The following factors were cited as affecting speculative sentiment: (1) continuing adverse developments in the international situation, particularly with respect to the U.S.S.R., Germany and China; (2) unimprovement in the inflation picture, with high prices refusing to fall and with prospects of a price increase because of recurring strikes in basic industries, as well as increased taxation prospects; (3) failure to balance the national budget by about $5,000,000,000 and the prospect of increased taxation both nationally and locally; (4) soviet possession of atomic knowledge and the prospect of continued growth in the U.S. defense burden; (5) growth in the national outlay for the welfare program and for farm support; (6) crippling strikes in two basic industries—coal and steel—toward the end of the year, and continuing agitation for additional strikes; (7) devaluation of currencies in about 30 countries; (8) continuing concentration of greater power over industry in the federal government; and (9) lack of public interest in common stocks, to such an extent that the New York Stock exchange undertook a campaign to develop greater interest.

On Nov. 1, 1949, the market value of all listed shares on the New York Stock exchange stood at $72,631,000,000, with an average flat price per share of $43.75. On Nov. 1, 1948, this market value stood at $72,186,000,000, with an average flat price per share of $45.26. A depreciation in the value per share of approximately 3.3% was thus shown for the period.

Number, Volume and Amount of Stocks.—According to the New York Stock exchange's compilation, the total stocks listed on that exchange on Nov. 1, 1949, stood at 2,145,000,000 shares, with a total market value of $72,631,000,000. This value compared with $72,185,000,000 on Nov. 1, 1948, $68,884,000,000 on Nov. 1, 1947, $66,115,000,000 on Nov. 1, 1946, and $69,560,000,000 on Nov. 1, 1945. Of the 1949 total (as of Nov. 1) United States stocks aggregated 2,079,000,000 shares, valued at $71,451,000,000, and stocks of other countries 65,834,000 shares, valued at $6,180,000,000. The total of shares was distributed over 1,432 separate United States issues and 20 issues of other countries, representing a total of 1,452 issuing corporations.

Total shares traded on the New York Stock exchange during 1949 amounted to 272,203,402 shares, as compared with 302,218,965 shares during 1948, 253,624,000 shares during 1947, 363,709,000 shares during 1946, 377,564,000 shares during 1945 and 1,125,000,000 shares during 1929, the largest yearly total

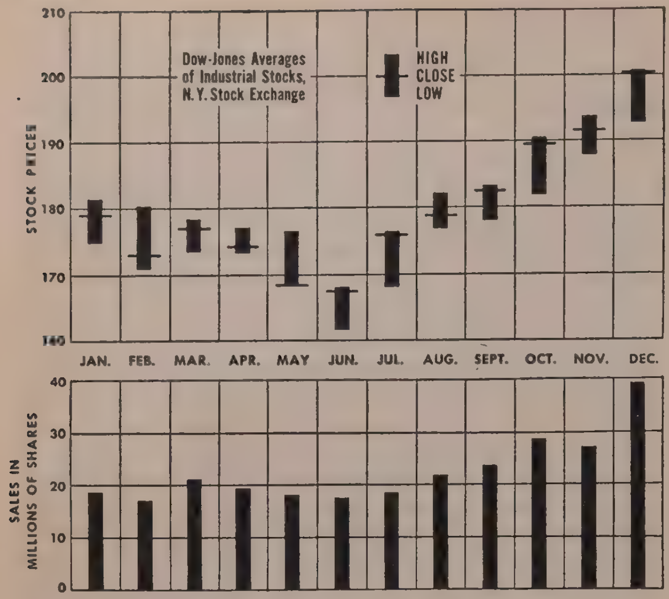


TRADING IN STOCKS on the New York Stock exchange: yearly range of prices and number of shares sold, exclusive of odd-lot and stopped sales

Table II.—*1949 Price Range of 25 Leading Representative U.S. Common Stocks*

Stock	Close 1948	High 1949	Low 1949	Close 1949
Allied Chemical & Dye	181	210	165	205
American Car & Foundry	31⅛	33½	21½	26
American Smelting & Refining	54¾	56¾	39¼	55¼
American Telegraph & Telephone	150	150⅝	138	146½
American Tobacco	61⅛	76¾	60¼	74½
Anaconda Copper.	34	35¼	25⅛	28⅜
Bethlehem Steel	32⅜	33⅞	23⅛	32
Chrysler Corporation.	53⅛	68¼	44⅛	67¼
Douglas Aircraft	49⅝	72¾	48⅝	72½
E. I. du Pont de Nemours*.	183¾	62¾	43¼	61⅝
General Baking	10½	11	9⅞	10⅝
General Electric.	39¼	42⅜	34	42⅛
General Motors	59⅛	72¾	51⅞	71⅝
Goodyear Tire & Rubber	42	45⅜	34	44¾
Great Northern Ry. (pfd.)	40¾	43¾	33¼	41
Illinois Central Railroad.	30⅛	36¾	22½	36½
International Harvester	26¾	29⅜	22¾	27¾
Montgomery Ward	54⅛	59⅜	47⅝	54⅞
National Dairy Products	27⅝	39⅜	27⅛	39
New York Central Railroad	12½	13½	9¼	11¾
Pennsylvania Railroad	16½	17¾	13¾	17⅛
Standard Oil of Indiana	39⅜	45⅛	36⅛	44¾
Standard Oil of New Jersey	72¾	74⅞	60¼	66¾
Union Pacific Railroad	86½	89½	73¼	84
United States Steel†	70⅜	26⅝	20¼	26⅝

*Split up four shares to one.
†Split up three shares to one.



SALES AND PRICES on the New York Stock exchange, 1949

on record. The 1949 market thus appears to have been slightly less than the market of the preceding year. The New York curb market had sales during 1949 of 66,130,000 shares, as compared with 75,090,000 during 1948, 72,380,000 during 1947, 137,220,000 shares during 1946, 143,337,000 shares during 1945, 71,062,000 shares during 1944 and 71,382,000 shares during 1943. It will be observed that on the curb exchange also the volume of sales during 1949 was somewhat smaller than that of the preceding year.

U.S. Bonds.—As in 1948, the U.S. bond market was remarkably stable during 1949 at a high price level (*see* Table III). The rise in bonds after June was to the accompaniment of a similar trend in the stock market.

Table III.—*U.S. Bond Prices for 1949*

Composite Bonds A1+
Dollars per $100

Month	Average	Month	Average
Jan.	119.8	July	120.9
Feb.	120.0	Aug.	121.7
March	120.7	Sept.	122.1
April	120.2	Oct.	121.9
May	120.2	Nov.	122.2
June	120.2	Dec.	122.5

By courtesy of Standard and Poor's Weekly Corporate Bond Price Indexes.

Number, Volume and Amount of Bonds.—According to the New York Stock exchange's compilation, the total par value of bonds listed on that exchange at the beginning of Nov. 1949 stood at $129,870,000,000, with a market value of $132,221,000,000—compared with $131,226,000,000 and $136,711,000,000 for the corresponding years of 1948 and 1947. Of the 1949 total, U.S. corporation bonds (at the beginning of November) amounted to $17,328,000,000 (par value), with a market value of $16,478,000,000; company bonds of other countries, a par value of $551,153,000 and a market value of $475,925,000; United States government bonds (inclusive of corporations and subdivisions), a par value of $110,279,000,000 and a market value of $114,029,000,000; and other governments (inclusive of subdivisions), a par value of $1,460,000,000 and a market value of $982,410,000. The total listed bonds of United States corporations were distributed over 616 issues with 312 issuers; of United States government bonds, 71 issues and 3 issuers; and other governments, 182 issues and 48 issuers. The total bonds traded on the New York Stock exchange during 1949 amounted to $817,949,070, as compared with $1,013,829,000 during 1948, $1,076,000,000 during 1947, $1,364,000,000 during 1946, $2,262,000,000 during 1945, $2,695,000,000 during 1944 and $3,255,000,000 during 1943.

Table IV.—*1949 Price Range of 25 Leading U.S. Domestic Bond Issues*

Name	High	Low	Last (Dec. 31)
American Telegraph & Telephone 2¾s 86	98½	88¼	96⅞
American Tobacco 3s 62	104⅞	103	103¾
Atchison, Topeka & Santa Fe 4s 95	129⅞	122⅝	129½
Bethlehem Steel 2¾s 70	101⅞	97⅜	100¾
Chesapeake & Ohio 3½s 96D	103½	97	100½
Chicago, Burlington & Quincy 3⅛s 85	104	98½	104
Commonwealth Edison 3s 99	105¼	101½	104¾
Erie 4½s 2015	72	57	67½
Great Northern Railway 5½s 52	110½	107¼	107¼
Illinois Bell Tel. 2¾s 81	103	97	103
Illinois Central 4¾s 65	96	77	96
Louisville & Nashville 3¾s 2003	102½	97½	102½
National Dairy 2¾s 70	103½	99⅜	103
Northern Pacific 4s 97	108	97	107⅝
Ohio Edison 3s 74	106½	100⅜	106⅜
Pennsylvania Railroad gen 5s 68	110	96½	106
Philadelphia Electric 2¾s 67	104¼	100¾	104
Reading Railroad 3⅜s 95	95	85	94½
Southern Pacific 4½s 81	93⅝	75	93⅝
Southern Railway gen 4s 56	98	79⅞	92¾
Standard Oil of New Jersey 2⅜s 71	98⅜	93¾	98⅛
Swift & Company 2⅝s 72	101⅞	97⅜	101⅞
Union Pacific 2⅞s 76	104½	100⅜	104½
Western Union 5s 51	101¾	86	99¾
Westinghouse Electric cv 2.65s 73	109⅞	100	109¼

New York Stock Exchange.—As was the case during 1948, the New York Stock exchange's alterations in its rules, practices and recommendations was confined to only a few subjects in 1949. Only five topics may be listed as significant, as follows:

Margin Requirements.—On Feb. 4 the board of governors amended its margin rules "to provide that, effective Feb. 15, purchases of securities selling at or below 5 may be made on the credit basis previously extended to securities selling above 5." On March 28 the federal reserve board ruled that beginning March 30 margin requirements for purchasing registered securities would be reduced from 75% to 50%. With respect to specialists on the exchange the federal reserve board, on July 19, also amended its margin regulations "to permit extension of credit in any amount to specialists in the securities in which they specialize." With respect to the exchange's initial margin rule, the board of governors decided upon a reduction in the minimum equity requirement from $1,000 to $500, effective June 6. On Aug. 19, the exchange rescinded its rule prohibiting solicitation of margin accounts in the homes of customers, without specific written permission of customers.

Rights of Members.—Here two actions deserve mention; namely, (1) amendment of the exchange's rules to "permit remuneration of registered representatives on a salary or a commission," and (2) refusal of the exchange to endorse permissive incorporation.

Petition for an Enlarged Board of Governors.—On Oct. 20, 422 members petitioned the exchange for constitutional amendments to increase the size of the board of governors from 25 to 32 to provide "adequate representation of active floor members." Subsequently a new petition was issued altering somewhat the first petition. The two petitions provided for the following change:

	Present	1st petition		2nd petition	
New York city members	10	14	(all active)	13	(10 to spend substantial time on floor and 7 also to be firm partners)
New York city partners	4	6	(allied members or inactive members)	6	(5 allied members and 1 member)
Out-of-town members or partners (at least 2 members)	7	8		9	
Public representatives	2	2		3	
Chairman	1	1		1	
President	1	1		1	
	—	—		—	
	25	32		33	

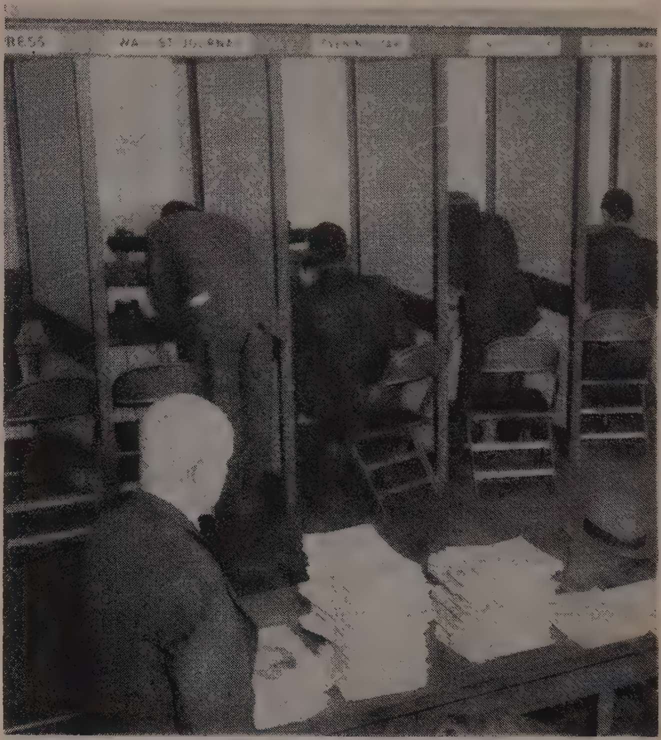
Inquiries and Recommendations.—Under this heading five subjects may be mentioned as most important; namely:

1. A committee inquiry into the advisability and practicability of the retirement of members.
2. A study by a committee of the question of trading hours.
3. A proposed consolidation of midwestern exchanges. Concerning this proposal Emil Schram, president of the New York Stock exchange, made the following statement: "The announced purpose of the proposed consolidation of several mid-western regional stock exchanges is, as I understand it, to provide better markets for the securities of local companies. This is commendable. I feel that I should make it clear, however, that if there is any departure from the stated objectives, in the direction of a dilution of the national market provided by the New York Stock Exchange, such a step would be seriously detrimental to the public interest."
4. A survey by a special committee of the public relations program of the exchange.
5. A tax study submitted by President Schram, to President Truman and to congress, concerning the federal tax structure in relation to the capital market and employment. The proposal recommended "that individuals be allowed a credit of 10% on common stock dividends in computing their income tax as a start toward elimination of double taxation; a reduction of the tax on long-term capital gains to 10%; an increase to $5,000 of the amount of capital loss that can be offset against ordinary income annually, and a shortening of the holding period to 3 months."

Financial Statement of the Exchange.—According to the condensed statement income and expenses of the exchange for the nine months ended Sept. 30, 1949, showed a net loss of $325,995. This compared with a loss of $367,108 for the same period of 1948. (S. S. H.)

Great Britain.—Nowhere could the shadow, and the final substance, of devaluation of the pound, which took place on Sept. 18, 1949, be seen more clearly than in the gold mining share section of the stock exchange. Since the official U.S. price of gold remained at $35 an ounce, the effect of lowering the value of the pound from $4.03 to $2.80 was to raise the price of gold in terms of sterling; the actual increase arising out of this devaluation was from a price of £8 12*s.* 3*d.* to £12 8*s.* a fine ounce. Sterling producers of gold, such as South African, west African and Australian mines therefore stood to gain enormous advantages from devaluation, provided that the higher cost of machinery and stores imported from dollar areas and increased labour costs did not offset the addition to the revenue of the mines. At the end of 1948 the *Financial Times* gold mines index had fallen to 94.67, its lowest since July 1932. This downward trend was not reversed until March 1949. After that month the index advanced more or less without a break until following the Sept. 18 devaluation it achieved a new and substantially higher level, closing 1949 approximately 40% higher than in Jan. 1949. (*See* Table V.)

On the other hand, devaluation and the factors leading up to it had a depressing effect on the other principal classes of securities quoted on the stock exchange. British government securities touched the lowest levels since 1939. The fall amounted to 7%; until the government broker dramatically reversed the downward trend on Nov. 11, it was more than 10%. Such percentages represented immense falls in total money values, probably to the extent of £1,000,000,000 in British government securities alone. As the year closed, the effects of devaluation were tending to improve the external balance of trade and the gold and foreign exchange reserves of the country. This was reflected in firmer markets for British government securities.



RELEASE ROOM of the crop reporting board of the U.S. department of agriculture in Washington, D.C., where new crop reports are released impartially at a prearranged day, hour and minute. At the word "go," press reporters (above) dash to open phone lines and dictate high lights of the new crop reports to their papers

The steady rise throughout the year in yields of British government securities would, in normal circumstances, have tended to raise yields and depress prices of industrial shares quite irrespective of other influences. The yield on 2½% consols advanced from 3.13% to about 3.5%, but the parallel movement in the yield of industrial ordinary shares was of greater proportions, from 4.38% to 5.20%. However, the bear market, which began in industrial ordinary share prices at the beginning of 1947, persisted in 1949 and was in fact accelerated. While the falls in 1947 and 1948 were only of the order of 5% or so, in 1949 prices fell by 12¼%.

There was, indeed, little encouragement for investors to take an optimistic view of the future of share prices. The continued austerity policy of the government and the more or less fixed nature of dividends, the result of dividend limitation, provided no incentive. Taxation was increased by the raising of the distributed profits tax from 25% to 30% following devaluation. As the year ended, a brighter atmosphere developed, which is

Table V.—*Movement of the London Stock Market Indexes in 1949*

(Highest and lowest monthly figures)

	Price Indexes						Yields % on					
	Government Securities		Industrial Ordinary		Gold mines		Consols		Industrial Ordinary		Daily Bargains	
Month	High	Low	High	Low	High	Low	High	Low	High	Low	High	Low
Jan.	113.89	113.55	122.8	121.1	94.28	86.22	3.13	3.09	4.39	4.33	8,373	5,702
Feb.	114.00	113.89	122.7	118.6	95.65	89.72	3.09	3.07	4.48	4.34	8,551	5,466
March	113.87	113.61	118.2	111.2	103.89	88.74	3.13	3.10	4.78	4.49	8,545	5,568
April	114.05	113.74	115.5	113.7	106.24	102.40	3.11	3.07	4.74	4.67	8,276	4,887
May	114.02	113.06	116.0	109.6	103.09	98.11	3.12	3.06	5.02	4.65	7,248	5,549
June	113.01	109.37	108.4	100.1	103.21	98.70	3.34	3.15	5.50	5.07	7,403	4,848
July	109.90	106.88	105.1	101.7	112.14	103.75	3.46	3.29	5.41	5.23	7,158	4,956
Aug.	106.96	105.05	104.6	101.6	114.23	110.49	3.56	3.38	5.42	5.26	6,745	4,376
Sept.	107.28	106.08	110.3	103.5	135.15	107.75	3.51	3.40	5.33	5.01	13,686	4,140
Oct.	107.73	103.35	106.0	100.4	138.46	129.66	3.69	3.41	5.50	5.21	10,265	5,731
Nov.	107.01	101.48	103.5	99.8	136.43	132.08	3.80	3.41	5.54	5.34	7,400	5,224
Dec.	107.23	105.51	106.4	103.9	134.71	131.61	3.57	3.42	5.32	5.20	7,347	3,475

These indices of prices on the London stock exchange are reproduced by courtesy of the *Financial Times*, London.

Constituents of the indexes are: industrial ordinary, 30 of the leading British industrial equities; government securities, 11 British government securities, including short-dated, medium-dated, long-dated and some redeemable only at the option of the government; gold mines, 30 South and West African and West Australian gold mining shares. The industrial ordinary share yield is based on dividends on the shares in the industrial ordinary share index. Stock exchange markings are the number of bargains recorded in the stock exchange official list. Base dates of the indexes, when they were 100, are: industrial ordinary, July 1, 1935; government securities and gold mines, Oct. 15, 1926.

not unusual at that season. This was partly a reflection of the reluctance of investors to sell and the consequent market shortage of stock. (A. L. W. S.)

Stomach Disorders: *see* Alimentary System, Disorders of.

Straits Settlements: *see* Malaya (Federation of) and Singapore.

Strategic Mineral Supplies: *see* Munitions of War.

Strawberries: *see* Fruit.

Streptomycin: *see* Chemotherapy; Medicine; Tuberculosis.

Strikes. Detailed statistics on causes, results and numbers of current strikes and lockouts are published by the U.S. department of labour and the ministries of labour of Great Britain and Canada.

During 1948 (Table I), the U.S. experienced 3,419 labour disputes, a decline of 274 from the 1947 level and of 1,566 from the 1946 level. A total of 34,100,000 man-days were lost in 1948 which was only slightly less than in 1947. This was opposed to the record level of 116,000,000 man-days lost in 1946. The first eight months of 1949 indicated a further decline in such activity since the strikes in progress caused a loss of less than 19,000,000 working days. However, several very large strikes of several weeks' duration occurred in the coal mining and steel industries in later months.

All known work stoppages, arising out of labour-management disputes, involving six or more workers and continuing as long as a full day or shift are included in reports of the bureau of labour statistics. Figures on man-days idle and workers involved cover all workers made idle in establishments directly involved in a stoppage. Figures for 1949 are preliminary and subject to revision.

A comparison of the numbers and results in time lost of work stoppages in Great Britain for the first eight months of 1949 and the corresponding months of 1948 is given in Table II. Although the number of workers involved in 1949 increased slightly, the number of strikes and the number of man-days lost decreased. In two of the major industries, coal mining and transportation, the number of strikes declined while man-days lost increased. In iron and steel manufacture and in the important textile industries, however, the number of man-days lost were reduced.

During the first eight months of 1949, the number of strikes beginning decreased over the corresponding months of 1948, declining from 1,280 in 1948 to 989 in 1949. There was a slight increase in the number of workers involved in 1949 when 359,400 persons were directly affected by labour disputes as opposed to 357,200 in 1948.

Working days lost decreased from 1,729,000 in 1948 to 1,463,000 in 1949.

Table III indicates the relative frequency and size of labour disputes in Great Britain in the first eight months of 1949 as compared with the same period in 1948. The large increase in number of working days lost in May 1949 over the same period in 1948 can be accounted for largely by the strike of the colliery workers in Lancashire. A similar fact resulted from the July 1949 strike of the London dock workers.

Table I.—*United States: Number of Strikes Beginning in the Year, Workers Involved and Man-days Lost*

Year	Number of strikes	Number workers involved	Man-days idle during year	Per cent of estimated work time
1935–39 (average)	2,862	1,130,000	16,900,000	0.27
1945	4,750	3,470,000	38,000,000	.47
1946	4,985	4,600,000	116,000,000	1.43
1947	3,693	2,170,000	34,600,000	.41
1948	3,419	1,960,000	34,100,000	.37
1949 (8 mo.)	2,625	1,910,000	18,750,000	.32

Source: United States Bureau of Labor Statistics, *Monthly Labor Review.* 1949 figures are preliminary.

Table II.—*Analysis by Industries of Work Stoppages Arising from Industrial Disputes in Great Britain: First Eight Months of 1949 and Corresponding Months in 1948*

Industry	Jan.-Aug. 1949 Number of stoppages beginning in period	Jan.-Aug. 1949 Number of workers involved in all stoppages in progress	Jan.-Aug. 1949 Aggregate number of working days lost in all stoppages in progress	Jan.-Aug. 1948 Number of stoppages beginning in period	Jan.-Aug. 1948 Number of workers involved in all stoppages in progress	Jan.-Aug. 1948 Aggregate number of working days lost in all stoppages in progress
Coal mining	614	212,800*	660,000	815	154,700*	381,000
Brick, pottery, glass, chemicals, etc.	10	900	3,000	19	2,000	9,000
Engineering	69	10,700	70,000	69	46,900	120,000
Shipbuilding	33	7,000	43,000	49	16,000	207,000
Iron, steel and other metals	71	14,400	49,000	74	34,100	515,000
Textile	24	7,100	43,000	34	13,700	52,000
Clothing	12	900	5,000	21	6,300	25,000
Food, drink, tobacco	9	400	2,000	20	3,600	16,000
Woodworking, furniture, etc.	8	600	11,000	15	700	5,000
Paper, printing, etc.	5	800	5,000	8	3,500	25,000
Building, etc.	35	8,300	20,000	20	2,100	8,000
Transport	58	90,000*	523,000	79	62,800*	320,000
Distribution, commerce, etc.	7	800	1,000	9	3,200	11,000
Other industries and services	34	4,700	28,000	48	7,600	35,000
Total	989	359,400*	1,463,000	1,280	357,200*	1,729,000

*Some workers, largely in the coal mining and transport industries, were involved in more than one stoppage and are counted more than once in the totals. For all industries combined the net total workers involved was approximately 300,000 in the 1949 period and 310,000 in the 1948 period.

Source: *Ministry of Labour Gazette* (London).

Wage questions caused 42.7% of strikes in Great Britain in the first eight months of 1949 and accounted for 54% of the workers directly involved. Following wage questions in importance as strike causes were the problems caused by working arrangements and the employment of particular classes or persons. Although sympathetic action accounted for only 1.6% of the stoppages in this period, 10.1% of the workers involved in industrial disputes were accounted for by this cause. (*See* Table IV.)

Table III.—*Relative Frequency and Size of Labour Disputes in Great Britain: First Eight Months of 1949 and Corresponding Months in 1948*

Month	Strikes in progress 1949	Strikes in progress 1948	Number of working people involved* 1949	Number of working people involved* 1948	Number of working days lost 1949	Number of working days lost 1948
January	117	183	54,000	32,700	115,000	83,000
February	127	194	19,000	70,900	54,000	288,000
March	172	213	19,000	62,000	71,000	227,000
April	133	206	40,000	86,000	136,000	628,000
May	159	190	76,000	31,800	350,000	86,000
June	158	152	47,000	59,100	190,000	269,000
July	72	94	24,000	11,600	265,000	25,000
August	108	147	104,000	34,400	273,000	123,000

*The number of workers involved includes those who were thrown out of work at the establishments where the stoppages occurred, though not themselves parties to the dispute.

Source: *Ministry of Labour Gazette* (London).

Table V compares the number and time loss in Canadian labour disputes for the first eight months of 1949 with figures for all of 1948. During Jan., Feb. and Aug. 1949, time lost and employees involved declined below the corresponding months of 1948. All other months of 1949 experienced an increase in time loss (except July) and in number of workers involved. (*See* also Business Review; Labour Unions; National La-

Table IV.—*Analysis of Principal Causes of Industrial Disputes in Great Britain: First Eight Months of 1949*

Principal causes	Stoppages begun during 1949 Number	Stoppages begun during 1949 Per cent	Workers directly involved Number	Workers directly involved Per cent
Wage increase	57	6.0	37,900	16.4
Other wage disputes	351	36.7	86,800	37.6
All wage disputes	408	42.7	124,700	54.0
Hours of labour	36	3.8	6,300	2.7
Employment of particular classes or persons	148	15.6	42,600	18.4
Other working arrangements	319	33.3	27,400	11.4
Trade union principle	29	3.0	6,500	2.4
Sympathetic action	16	1.6	23,300	10.1
Total	956		230,800	

Source: *Ministry of Labour Gazette* (London).

Table V.—*Number* and Time Loss in Canadian Labour Disputes*

Month	1949 No. of strikes	1949 No. of employees involved	1949 Time loss in working days	1948 No. of strikes	1948 No. of employees involved	1948 Time loss in working days
Jan.	10	1,811	9,700	19	12,729	135,835
Feb.	9	7,235	71,732	14	11,058	140,130
March	10	5,978	135,725	15	3,845	57,133
April	18	7,877	139,500	18	4,678	51,269
May	23	10,540	174,150	22	3,204	39,754
June	27	11,359	141,084	29	3,804	34,337
July	18	12,501	57,744	26	8,338	77,588
Aug.	19	4,541	35,451	31	7,617	110,625
Sept.	..	...	...	32	11,878	118,293
Oct.	..	...	...	23	7,310	87,223
Nov.	..	...	...	20	3,307	16,000
Dec.	..	...	...	11	2,481	18,939

*These figures relate only to the actual number of strikes and lockouts in existence and the workers involved during the year, not being a summation in each case of the monthly figures.

Source: *Labour Gazette* (Ottawa). All 1949 and the last three months of 1948 figures are preliminary.

BOR RELATIONS BOARD; NATIONAL MEDIATION BOARD; UNITED STATES.) (P. TA.)

Subsidies: *see* AGRICULTURE.

Sudan: *see* ANGLO-EGYPTIAN SUDAN; FRENCH UNION.

Sugar. The period of sugar shortages which began in 1942 ended in 1949. Production of sugar in 1948–49 in the principal areas supplying the U.S. was 10,695,000 tons, only 6% less than the record crop of 1947–48, and far above prewar. Production in 1949–50 in areas supplying the U.S. was preliminarily estimated to be approximately 10,100,000 tons, or 5.5% less than in the previous year, the reduction being largely the result of an expected decline in the Cuban harvest.

Total sugar production in the U.S. proper was estimated for 1949 at about 2,100,000 tons, compared with 1,846,000 tons in 1948. The preliminary estimate of the 1949 crop included 1,550,000 tons of refined beet sugar and 550,000 tons of cane sugar. The 1949 U.S. crop included a sugar-beet crop of 10,110,000 tons, 9% larger than the 9,422,000 ton crop of 1948 and about the same as for the 1938–47 average. Acreage harvested dropped to 690,000, compared with 694,000 in 1948 and 796,000 average of 1938–47. Yields under generally favourable weather increased to 14.7 tons per acre, compared with 13.6 tons in 1948 and 12.7 tons average 1938–47.

Table I.—*U.S. Sugar-Beet Production*
(In thousands of short tons)

State	1949	1948	Average, 1938–47
California	2,565	2,819	2,068
Colorado	1,872	1,370	1,912
Idaho	1,062	1,233	1,026
Michigan	739	458	788
Montana	690	672	867
Nebraska	559	496	801
Utah	462	427	577
Wyoming	392	310	467
Ohio	247	161	290
Other States	1,580	1,476	1,349

The 1949 sugar-cane crop, mostly in Louisiana, to be used for sugar making, was well above average and was estimated at 6,842,000 tons, compared with 6,279,000 tons in 1948 and an average for the previous decade of 5,503,000 tons. Yields in tons per acre were high at 21.5, compared with an average for the decade of 20.3. Acreage at 318,600 was slightly above 1948.

Sugar cane for syrup in several southern states was a smaller crop in 1949, principally because acreage was cut to 69,000 from 79,000 the previous year. Production was 11,770,000 gal., against 13,390,000 gal. in 1948.

Other minor U.S. sources of sugar, such as honey and maple sugar products, were produced in 1949 in significantly larger amounts than in 1948, whereas sorgo syrup was the smallest crop on record, 6,012,000 gal., against 7,665,000 gal. in 1948 and 11,173,000 gal. for the decade. Maple products of the northeast amounted to 1,614,000 gal. of syrup and 292,000 lb. of sugar, against 1,445,000 gal. of syrup and 229,000 lb. of sugar in 1948. The 1949 honey crop was estimated at 229,751,000 lb., 11% more than in 1948. Prices were generally lower. Honey was included under mandatory price supports in the Agriculture act of 1949, primarily because of the value of the honey bee in the pollination of many agriculture crops.

Table II.—*U.S. Sugar-Cane Production*
(In thousands of short tons)

State	1949	1948	Average, 1938–47
Louisiana	5,781	5,261	4,643
Florida	1,061	1,010	860

PHILIP MURRAY, president of the C.I.O., addressing some 10,000 steel workers in Gary, Ind., on the pension and welfare issues involved in the nation-wide United Steelworkers' strike which began on Oct. 1, 1949

Civilian consumption of refined sugar in 1949 was estimated at 93.3 lb. per person, compared with 95.6 lb. in 1948 and an average of 97 lb. during the years 1935–39.

The U.S. sugar supply quota for 1949 was initially set at 7,250,000 tons by the U.S. department of agriculture, but later was raised to 7,500,000 tons. Under the Sugar act of 1948, the department of agriculture late in 1949 again held public hearings in order to determine the 1950 requirements of consumers in the continental U.S., and the marketing quota for 1950 was set at 7,500,000 tons.

Domestic sugar prices were fairly stable during 1949 at levels slightly above those of 1948; the wholesale price of refined sugar ranging about 7.5 cents to 8 cents per pound, whereas U.S. prices on raw sugar were less than 6 cents per pound, and world prices approximated 4 cents per pound.

The world cane- and beet-sugar crop of 1949–50 was estimated at 36,646,000 short tons (raw value), 2% less than the record crop of 37,249,000 tons of the previous year. Of that total, beet sugar accounted for 11,362,000 tons, compared with 11,071,000 tons in 1948–49, a prewar average of 12,025,000 tons and a 1945–46 low of 6,626,000 tons. Sugar from cane was only 25,284,000 tons, nearly 900,000 tons less than the record crop of 1948–49. Smaller Cuban production was expected, as well as decreases in Brazil and some of western Europe. The Cuban crop declined to about 5,300,000 tons, compared with 5,763,000 tons in the previous year and 3,183,000 tons prewar, 1935–39. Java and Formosa were still far below prewar levels of production. Several European countries, the U.S.S.R. (2,200,000 tons) and the Philippine Islands harvested larger crops. Somewhat less than one-third of the total crop was expected to move in world trade. (*See* also FOOD SUPPLY OF THE WORLD.)

(J. K. R.)

Suicide Statistics.

The upward trend of the suicide death rate in the United States from the low point of 10 per 100,000 population in 1944 continued into 1949. Provisional indications from the experience of the millions of industrial policyholders of the Metropolitan Life Insurance company pointed to a 6% rise from 1948 to 1949. The estimated total number of deaths from suicide in the United States in 1948 was 16,878, with a death rate of 11.6 per 100,000 population. This total was distributed as follows according to race and sex: white males, 12,277; white females, 4,010; nonwhite males, 516; nonwhite females, 75. The respective death rates from suicide, per 100,000, were: 18.9, 6.1, 6.9 and 1. The suicide death rate for the white population as a whole was more than three times that for the nonwhite. Considered with respect to age, the death rates per 100,000 population at the stated ages were, in 1948: ages 1 to 14, 0.1; ages 15 to 24, 4.6; ages 25 to 44, 12.1; ages 45 to 64, 24.3; and ages 65 and over, 29.5.

The postwar rise in suicide mortality was in conformity with other postwar experiences and was anticipated. However, despite five years of rise, the provisionally indicated rate for 1949 was still below the immediate prewar level. In the prewar situation (1939–1941) in the United States, at age 20 the chances of eventual death by suicide were 18 per 1,000 for white males, 5 per 1,000 for white females, 4 per 1,000 for nonwhite males and only 1 per 1,000 for nonwhite females.

Canada in 1948 recorded 998 deaths from suicide, with a rate of 7.8 per 100,000 population, compared with a rate of 7.4 for 1947. In England and Wales, the number of suicide deaths recorded for 1948 was 4,788 and the death rate as 11 per 100,000; the rate for 1947 was 10.5 per 100,000 population.

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Sulphur.

World production of sulphur increased from about 4,700,000 short tons in 1946 to 5,380,000 tons in 1947 and 5,940,000 tons in 1948. The United States supplies about 90% of the total, with Italy, Japan and Argentina the only countries with outputs in excess of more than 1% of the total.

United States.—The salient data of the sulphur industry in the United States are shown in the following table, as reported by the U.S. bureau of mines.

Data on Sulphur Industry in the United States

(In thousands of short tons)

	1943	1944	1945	1946	1947	1948
Production.	2,843.5	3,604.4	4,203.6	4,322.8	4,974.1	5,453.5
Shipments.	3,308.3	3,941.4	4,293.3	4,623.6	5,020.7	5,576.4
Imports.	18.7	...	...	...	...	...
Exports.	764.4	756.2	1,055.8	1,395.3	1,511.5	1,451.0
Available supply . .	2,562.6	3,185.2	3,237.5	3,228.3	3,509.2	4,125.4
Consumption.	2,836	3,270	3,316	3,256	3,965	3,612.0
Stocks (producers') . .	4,997	4,600	4,484	4,221	3,771.5	3,612.0

The production rate was allowed to decline slightly in 1949, the total for the year being 5,314,416 short tons. Shipments continued to have a small lead over production, with 5,364,028 tons, and stocks dropped to 3,471,222 tons. (G. A. Ro.)

Sumatra: *see* NETHERLANDS OVERSEAS TERRITORIES.

Support Prices: *see* AGRICULTURE.

Supreme Court of the United States.

The court suffered the loss of two of its members, during summer vacation, by the deaths of Associate Justice Frank Murphy on July 19 and Associate Justice Wiley B. Rutledge on Sept. 10. They had served since 1940 and 1943, respectively.

Pres. Harry S. Truman named Thomas C. Clark (*q.v.*), of Texas, the then attorney general of the United States, to succeed Justice Murphy and named Sherman Minton (*q.v.*), of Indiana, a judge of the United States court of appeals for the 7th circuit and formerly a United States senator, to succeed Justice Rutledge.

The October term, 1948, the longest in the history of the court, began Oct. 4, 1948, and continued through June 27, 1949.

In number of cases disposed of, the 1948 term ranked second only to the 1946 term—1,434 cases as against 1,520. In the opinion of the court, 90% of the cases did not merit disposition by full opinion as indicated by the fact that only 147 cases were covered by the 114 signed opinions rendered. There were 110 such opinions at the previous term. Ninety dissenting opinions were written and 35 decisions were by a vote of 5 to 4 as compared with 70 and 24 at the 1947 term. In addition there were 36 concurring and separate opinions. As at the preceding term the government was a party to slightly more than 50% of the cases decided by written opinion, approximately 70% being in its favour. Criminal matters, federal and state, again predominated.

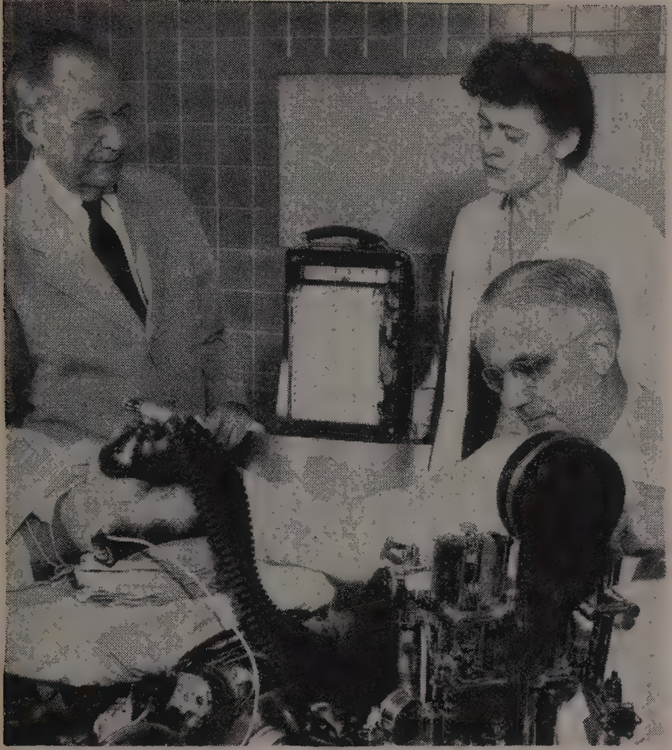
Members of the Court.—The United States supreme court was composed at the end of 1949 of the following members (dates indicate year appointment was confirmed by the senate): chief justice, Frederick M. Vinson (1946); associate justices, Hugo L. Black (1937), Stanley F. Reed (1938), Felix Frankfurter (1939), William O. Douglas (1939), Robert H. Jackson (1941), Harold H. Burton (1945), Thomas C. Clark (1949) and Sherman Minton (1949). (*See* also LAW.)

FILMS OF 1949.—*The Supreme Court* (Coronet Instructional Films).

(H. B. WY.)

Surgery.

In 1949 increasing attention was paid to clotting in the veins of persons, most of whom were hospital patients and in bed. Surgeons, more than internists, have emphasized the fact that venous thrombosis occurs frequently in patients suffering from nonsurgical conditions and is particularly likely to occur in patients with heart disease. In spite of measures used to decrease the incidence of venous clotting, the condition was apparently increasing. Alton Ochsner, M. E. DeBakey and Paul DeCamp showed that in the Huey P. Long Charity hospital in New Orleans, La., an institution in which considerable emphasis has been placed on venous thrombosis and in which prophylactic measures have been used, the incidence increased in recent years. Not only has the incidence of venous thrombosis and pulmonary embolism increased, but they have become relatively more important in patients who are subjected to operation. With the control of shock by the adequate administration of blood and the prevention and control of infection by the administration of antibiotics preoperatively and postoperatively, these two previously important postoperative causes of death have been practically eliminated, leaving venous thrombosis as the principal cause of death after operation. In order to determine which patients are potential sufferers from thrombosis, John Kay and Ochsner showed that clotting within the veins is dependent on a disproportion between the precursor of the clot, prothrombin, and its antagonist, antithrombin. By the determination of the antithrombin content of the blood, they



ROY D. McCLURE (left), Vivian G. Behrmann and Frank W. Hartman of the Henry Ford hospital, Detroit, Mich., applying the oxyhaemograph (above), a recording instrument for determining blood oxygen during anaesthesia, cardiorespiratory disorders, etc. A photoelectric-ear-cell registered greater light transmission through bright red oxygenated blood, and lower transmission through darker blood of decreased oxygen saturation, etc.

were able to predict the development of a clot. A deficiency of antithrombin can be prevented by the administration of alpha-tocopherol and calcium, which exert antithrombin activity.

The development of new techniques for the surgical correction of heart anomalies is of major interest. Rheumatic fever may produce severe permanent damage to the valves of the heart. Dwight E. Harken showed that the obstruction to the flow of blood by a badly scarred valve of the heart (mitral stenosis) can be relieved by cutting the narrowed heart valve. An instrument is inserted into the heart chamber and the valve. A piece of the scarred valve is removed. Charles P. Bailey and Richard P. Glover, working on the same problem, showed that both in the experimental animal and in human beings the condition could be relieved by introducing a knife under the direction of a finger, which is put into the heart chamber, and by cutting the valve to relieve the obstruction. Both these authorities reported successful results in patients. Because a patient with this disease (mitral stenosis) suffers from damming back of the blood into the lungs resulting from increase in pressure of the veins within the lungs, Bland and Sweet corrected the abnormality by shunting the blood from the lung veins into the systemic veins of the body. They operated on a number of patients successfully by joining a branch of the lung vein to one of the chest wall veins. Patients who previously suffered severe haemorrhages from their lungs were greatly benefited.

Another approach to the problem of patients with bad heart disease resulting in heart failure was made by Pedro Cossio and Isidro Perianes. They obtained relief of symptoms in patients with severe heart damage and evidences of heart failure by tying off the main vein (vena cava) draining the lower part of the body. In this way, by decreasing the blood flow back to the heart, the marked pressure in the veins and the heart is decreased. This method has been applicable only in the severe cases and when other methods are not suitable.

In order to relieve the symptoms from diminished blood supply to the brain in patients with scarring of the brain from various causes, G. H. Sciaroni suggested uniting the main artery supplying the head with the vein draining the brain (carotid-jugular anastomosis). Sciaroni performed this operation successfully in patients with paralysis and with epileptic seizures resulting from brain scarring. C. S. Beck and his associates performed the operation successfully in children with a decrease in the brain substance due to a diminished blood supply. By the procedure of anastomosis of the artery with the vein, arterial (oxygenated) blood coursing through the main artery (the carotid) is carried through the veins of the brain in these patients. In this way the brain is better nourished than it would be otherwise. (*See* also Anaesthesiology; Medicine.)

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(A. O.)

Surinam (Dutch Guiana). A Netherlands colony in northeastern South America, Surinam is bounded on the north, east, south and west by the Atlantic ocean, French Guiana, Brazil and British Guiana, respectively. Area: 54,291 sq.mi.; population (1948 est.): 209,700. In addition to 80,600 native-born Surinamese and American Indians, principal population groups include 56,000 British Indians, 35,000 Javanese, 19,000 Negroes, 2,400 Chinese, 750 Dutch-born and 450 born elsewhere in Europe. The capital and chief port is Paramaribo (pop., 1946 est., 71,000); other towns (with 1946 pop. est.) are Nieuw Nickerie (3,100) and Moengo (1,600). The official language of the colony is Dutch, although English, Javanese, Hindi, and Urdu are also widely understood, and a Surinamese dialect called "Negro English" or "talkie-talkie" is in widespread use. Governor in 1949: Willem Huender; after Dec. 2: J. Klaessesz.

History.—Projects designed to secure autonomy for Surinam within the Netherlands empire moved forward during 1949 with less friction than in the previous year. However, some agitation followed the adjournment at Havana, Cuba, on July 21 of a meeting of representatives of the Latin-American republics sponsored by the American Committee on Dependent Territories, which had been established in 1948 by the Ninth International Conference of American States. The Havana meeting adopted a resolution requesting a later inter-American conference to call upon the remaining European powers with American possessions to co-operate in (1) granting eventual independence to these holdings, and (2) establishing United Nations trusteeship arrangements for colonies found to be incapable of self-government. Meanwhile, the Netherlands government intensified its co-operation with the U.S., the United Kingdom and France through the International Caribbean commission, representing a four-power approach to the problems of Surinam and other dependent territories in the western hemisphere.

During 1949 plans were begun for the 1950 conference of the commission, the agenda including industrial development, labour conditions, human rights and agricultural problems in the affected colonies. (*See* also Netherlands Antilles.)

(G. I. B.)

Education.—On Jan. 1, 1949, Surinam had 129 primary schools with 773 teachers and 31,463 pupils. About 12.5% of the 1949 budget was earmarked for education.

Finance.—The monetary unit is the Surinam guilder, valued on Dec. 15, 1949, at $0.530264, U.S. currency, official rate. Actual government revenue in the fiscal year 1948 was 22,147,000 guilders (estimated 1949: 26,683,000 guilders); actual expenditure was 21,120,000 guilders (estimated 1949: 26,090,000 guilders). There is no national debt. Notes in circulation on Oct. 1, 1949, totalled 10,683,000 guilders; the gold reserve was 6,586,649 guilders. The Surinam bank, the local bank of issue, had deposits of 8,474,091 guilders on Oct. 1, 1949; the other commercial bank had deposits of 732,088 guilders. On Dec. 31, 1948, the Government Postal Savings bank had deposits of 4,440,887 guilders.

Trade and Communications.—Exports in 1948 totalled 27,371,980 guilders; imports were 36,172,232 guilders. The chief exports were bauxite (79%), timber (5%), citrus fruit (5%), gold (4%), balata, rice and coffee. Principal customers were the U.S. (85%) and the Netherlands (10%); the chief suppliers were the U.S. (49%), the Netherlands (30%) and Trinidad (6%).

Internal transportation is largely by water. International air service was supplied by five air lines in 1949. In 1948 there were 1,505 telephones and 500 mi. of wire.

Production.—The major economic activity is the extraction of bauxite, most of which is exported to the U.S. Production figures in 1948 included bauxite 2,186,000 short tons, gold 4,150 troy oz. and balata 410 short tons.

Swains Island: *see* Samoa, American.

Swaziland: *see* British South African Protectorates.

Sweden.

A democratic monarchy of northern Europe. Area: 173,390 sq.mi.; pop. (Dec. 31, 1948): 6,924,888. Capital: Stockholm (pop. Dec. 31, 1949) 732,281. Other principal cities (pop. Dec. 31, 1949) were Göteborg 349,323, Malmö 189,391, Norrköping 84,228, Hälsingborg 71,263, Örebro 65,630, Upsala 61,561. Religion: Lutheran Christian. Ruler in 1949: King Gustavus V. Prime minister: Tage Erlander.

History.—Sweden tried in 1949 to achieve something of the old dream of Scandinavian union. The immediate occasion was Sweden's desire to remain aloof from the conflict of east and west, and its fear that Denmark and Norway might be led into the arms of the Atlantic bloc. If Norway, for instance, should become occupied or be used as a base by either of the great power antagonists during a war, it would be practically impossible for Sweden to hold apart. Sweden therefore offered to include Denmark and Norway in its own armed neutrality sphere, to regard Scandinavia as one defense area, the only condition being that its neighbours make no commitments to the western powers. A series of conferences in Karlstad, Copenhagen and Oslo in January tried strenuously to attain agreement. In Copenhagen not only the foreign ministers, but representatives of each of the political parties (except Communist) from each of the three countries, met in what was almost a Scandinavian parliament. But Sweden insisted that Scandinavia stand alone, and Norway insisted that it must have arms and guarantees from the west. Union of the north failed once more.

Denmark and Norway joined the North Atlantic treaty, and Sweden stood alone. The chief avowed reason for Sweden's unwillingness to join the Atlantic group of states was that Sweden feared its accession would antagonize the Soviet Union and perhaps lead to increased soviet pressure on Finland—and thus on Sweden's own borders. Ideologically Sweden was with the west, and in case of the outbreak of a fighting war most Swedes felt it likely they would be drawn in. Attempts continued to achieve some form of military co-ordination between Denmark, Norway and Sweden, but nothing significant was accomplished.

Co-operation in the economic realm seemed as difficult as it was in the strategic or diplomatic. A joint committee began in 1948 discussion of a northern customs union, and the insistence of the U.S. on "integration" in connection with the European Recovery program brought a pledge of action from the three Scandinavian ministers. But by the end of 1949 the three countries had still been unable to find the bases for common action.

MASS PRECISION exhibited by the Danish men's team at the World Gymnastic festival held in Stockholm, Sweden, during July 1949. The Danes are shown doing *Brysthaevninger* (push-ups)

Sweden participated in the discussions of the Council of Europe. In December a one-year trade agreement with Britain supposedly prepared the way to the future abandonment of such bilateral agreements. British and Scandinavian officials held preliminary discussions in Stockholm on the mutual removal of currency restrictions and the freeing of trade. One practical step in widened co-operation was the integration of schedules between the Scandinavian Airlines and the Dutch and Belgian lines.

The Marshall plan or ERP was aiding Sweden, but indirectly rather than directly. Sweden, more prosperous than most of the countries involved, received no outright gifts. In the first year its allotment was about half loan and half "conditional aid"—that is, payment in dollars for goods or credits granted by Sweden to others in the group. In the second year the only aid was this dollar payment for goods—$48,000,000 recommended. (*See* also European Recovery Program.)

Sweden's new problems of foreign exchange were being met by heroic slashes in imports from the U.S., and by attempts to increase exports to the U.S. of glass, furniture and pulp.

Price difficulties blocked its hopes in the first part of the year, but the government felt it dared not devalue the krona alone. In September, when Britain devalued, Sweden immediately followed suit, and to the same extent of 30.5%.

During the year rationing was relaxed or abandoned on most foods; gasoline and coffee, both imported, were the chief items still restricted.

Sweden still faced a serious problem of immigration. In November there were 195,000 foreigners in the country, of whom 92,000 were employed. Ten thousand refugees had entered since the end of the war. From across the Baltic 1,700 Poles and east Germans had entered illegally in a 12-month period. Some fled from persecution; many merely sought better economic conditions. About 60 small boats were known to be engaged in more or less regular refugee traffic. About 10% of the immigrants had been refused admission. (F. D. S.)

Education.—Schools: elementary (1947–48) pupils 555,000, teachers 27,500; higher elementary (1948–49) pupils 4,359; continuation (1947–48) pupils 71,600; (municipal) middle (1948–49), pupils: mixed 4,470, girls' 16,254, practical 7,103; state secondary (1948–49) 203, pupils 75,032; higher private (1948–49) pupils 8,472; folk high schools (1948) 70, students 7,887; two universities and three institutions of higher education (1948–49): students 9,742.

Finance and Banking.—Budget: (1949–50 est.) revenue 5,139,000,000 kronor, expenditure 4,677,000,000 kronor. Public debt: (Aug. 1949) 12,046,000,000 kronor; (Aug. 1948) 11,610,000,000 kronor. Currency circulation: (Oct. 1949) 2,894,000,000 kronor; (Dec. 1948) 3,113,000,000 kronor. Gold reserves: (Oct. 1949) 364,000,000 kronor; (Nov. 1948) 289,000,000 kronor. Commercial bank deposits: (Aug. 1949) 8,100,000,000 kronor; (Aug. 1948) 7,443,000,000 kronor. Savings bank deposits: (June 1949) 6,967,000,000 kronor; (March 1948) 6,488,000,000 kronor. The cost-of-living index (1935=100): March 1949, 169 (March 1948, 164). The monetary unit is the krona (pl. kronor); exchange rates: (Sept. 15, 1949) U.S. $1=3.60 kronor (Dec. 15, 1949) U.S $1=5.18 kronor.

Foreign Trade.—(1948): Imports 4,887,000,000 kronor, exports 3,964,000,000 kronor. The largest supply countries (1948): Great Britain (839,000,000 kronor); U.S. (688,000,000 kronor); Belgium (290,000,000 kronor); Poland (265,000,000 kronor); France (256,000,000 kronor). The best customer countries were: Great Britain (673,000,000 kronor); Norway (366,000,000 kronor); U.S. (295,000,000 kronor); Netherlands (244,000,000 kronor); Belgium (240,000,000 kronor). Sweden's principal imports (1948): textiles (826,000,000 kronor); oil and mineral products (1,003,000,000 kronor); metals and metal products (652,000,000 kronor); machines, apparatus and electrical material (519,000,000 kronor). Principal exports: pulp, paper, etc. (1,571,000,000 kronor), the volume of pulp exports being maintained in 1949 despite loss of sales to U.S.; metals and metal products (455,000,000 kronor); machines, apparatus and electrical material (458,000,000 kronor); wood and woodwork (451,000,000 kronor).

Transport and Communications.—Railways (1948): 16,869 km. Roads (1949): 90,004 km., including 4,748 km. paved. Motor vehicles in use (Dec. 1948): private cars 179,587; trucks 76,368; buses 6,471. Shipping (Dec. 1948): 2,204 seagoing vessels (1,457 steam and motor) amounting to 2,057,304 gross tons. In 1948 Swedish shipbuilding, with 246,000 tons constructed, ranked second in the world. Telephones (Dec. 1948): 1,450,478 or 212 per 1,000 inhabitants. Radio licences (1949): 2,025,099, or one for every Swedish family.

Agriculture and Fisheries.—Harvest estimates for 1949: cereals 908,400 metric tons (1948, 1,024,300 tons); grain for fodder 20% below and potatoes 11% below the 1930–39 average. In 1949–50 Sweden would have to import 75,000 tons of refined sugar. Oleiferous plants, subsidized by the state, by 1949 ensured the nation's supply of edible fats. In 1947, 7,517,707 ha. of state forests produced 5,671,813 cu.m. of timber. Livestock (June 1, 1948): horses 497,260; cattle 2,624,708 (1,705,479 cows); pigs 1,195,018; sheep 349,446; goats 17,177; poultry 9,007,321; reindeer (1946) 168,640. Fisheries (1947): total catch 155,942 metric tons worth 89,000,000 kronor.

Industry.—Industrial establishments (1946): 17,781 with 652,435 workers, producing goods worth 16,030,000,000 kronor. It was expected that iron ore exports would reach 12,000,000 metric tons in 1949 (1948: 11,000,000). In 1948, 14,269,000,000 kw.hr. of electricity were produced (11,663,000,000 hydroelectric, including 5,760,000,000 from upper Norrland). Oil was found in small quantities in Höllviken, Skåne. In 1945 industry and crafts occupied 39.7% of the population. The Industrial board production index (1935=100) reached 136 in July 1949.

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Sweet Potatoes: *see* POTATOES.

Swimming.

The rise of Japan to international leadership was the outstanding development in swimming in 1949. Six Nipponese youths scored an upset victory in the men's outdoor championships of the United States, winning four of the five free-style events and cracking five world records.

Twenty-one-year-old Hironoshin Furuhashi led the invaders and stamped himself as perhaps the greatest swimmer in history by cutting the standards for 400 m. from 4 min. 35.2 sec. to 4 min. 33.3 sec., 800 m. from 9 min. 50.9 sec. to 9 min. 35.5 sec., 1,000 m. from 12 min. 33.8 sec. to 12 min. 14.8 sec. and 1,500 m. from 18 min. 58.8 sec. to 18 min. 19.0 sec. He also helped Yoshihiro Hamaguchi, Shigeyuki Maruyama and Shuichi Murayama to nip the time for the 800-m. relay from 8 min. 46.0 sec. to 8 min. 45.6 sec.

Swimmers from the United States swept the other events at the title meet, retaining supremacy at the back and breast strokes and in springboard and platform diving, and they also broke five world records during the year. Allen Stack lowered the back-stroke figures for 100 m. from 1 min. 4.0 sec. to 1 min. 3.6 sec., 150 yd. from 1 min. 30.4 sec. to 1 min. 29.9 sec. and 200 m. from 2 min. 19.3 sec. to 2 min. 18.5 sec.; Keith Carter shaded the mark for 100-yd. breast stroke from 59.4 sec. to 58.5 sec. and Paul Girdes, John Blum, Raymond Reid and John Moore slashed that for the 800-yd. relay from 8 min. 24.3 sec. to 7 min. 55.1 sec.

Only one world record for women fell officially, Greta Andersen, of Denmark, clipping the time for 100-yd. free style from 59.4 sec. to 58.2 sec.

The summer brought a lively renewal of activity in channel

HIRONOSHIN FURUHASHI, Japanese swimmer, during the qualifying trials for the 1,500-m. race in the National A.A.U. men's swimming and diving championships at Los Angeles, Calif., in Aug. 1949. Furuhashi broke three world records at the meet, those for the 400-, the 800- and the 1,500-m. free-style events swimming. Quite a few swimmers of both sexes attempted the gruelling trip from France to England and two men were successful. Fernand Dumoulin, a 34-yr.-old hero of the Belgian underground, lamed by a wound in the leg, undertook the long grind virtually without training and was further handicapped by rough water and several delaying accidents en route, but he stuck gamely to his task and finally attained his goal in 22 hr. 1 min. Philip Mickman, of England, 18, the youngest swimmer ever to conquer the channel, although swept off the course by the tide, effected a landing after a struggle of 23 hr. 48 min. (L. DE B. H.)

Switzerland. A republican confederation of 22 cantons in west-central Europe, Switzerland is bounded by France to the west, Germany to the north, Austria and Liechtenstein to the east and Italy to the south. Area: 15,940 sq.mi. Pop. (1941 census): 4,265,703; (mid-1948 est.) 4,609,000. Languages: mainly German and French. Religions: Protestant 57.6%; Roman Catholic 41.1%; Jewish 0.5%. Chief towns (pop., est. 1946): Berne (cap., 136,700); Zürich (360,500); Basle (170,300); Geneva (137,600); Lausanne (99,300). President of the confederation for 1949: Ernst Nobs.

History.—While the foreign relations of Switzerland in 1949 continued their course without any noteworthy change, attention was focused upon the foreign trade situation and an internal crisis which was both financial and constitutional. There was a noticeable trade recession in the first half of the year. This included a tendency unwelcome to the Swiss, who expect to import more than they export (paying the deficit out of their foreign assets), for imports to sink faster than exports; from July onward indeed the monthly figure for imports more than once sank below exports. In July and September this was, in fact, partly explained by the general expectation that sterling was about to be devalued and that it was therefore worth while delaying one's orders. With its trade necessarily dependent to a large extent upon bilateral agreements Switzerland found its clients quick to get short of Swiss francs while it itself tended to accumulate an uncomfortably large proportion of the world's gold.

Prices remained extremely high and, as the boom period had passed, were felt to be oppressive. The high cost of living was largely because of a policy of protection of the peasants—scarcely 20% of the total population—for whose benefit heavy duties were imposed upon imported food, whereas food exports were subsidized. This caused considerable indignation, and it was additionally felt that the official price-control office at Montreux was unnecessarily bureaucratic in its ways.

The main issue continued to be that of the budget, which was only balanced through taxes based upon emergency legislation which was due to expire at the end of the year. On behalf of the federal government it should be made clear that modern circumstances had enormously increased federal administrative costs and that the constitution did not forbid the direct federal taxes that had been introduced by emergency decrees which, moreover, both chambers and the chief political parties had accepted. Further, public opinion, although it rebelled against the high cost of living, approved of preserving the peasantry as a privileged group; it also attributed aggressive tendencies to the U.S.S.R. and believed that large sums should be spent on an up-to-date army and air force. Finally, it was natural that the federal government should wish to have a new financial order worked out within the constitution before it abandoned the special powers which it had used since the unemployment crisis of 1933.

In a country with the democratic traditions of Switzerland, however, emergency decrees four years after the end of the war were bound to be resented. Already in 1946 two "initiatives" had been tabled which demanded a popular vote on the constitutional issue; the actual voting was, however, constantly delayed by the minister of justice and police who publicly belittled the "initiatives." At last it was settled that the first of them which demanded the confirmation of emergency decrees by a popular vote should be held on Sept. 11, 1949.

On Sept. 11, although only 40% of the electorate voted, the first "initiative" was accepted by 281,961 against 272,359 individual votes, and by 12½ cantons against 9½. The actual majority was a narrow one but it created a constitutional crisis, since the sovereign people had protested against the methods adopted by their elected rulers and approved by their elected representatives. The chambers met later in September and in October, and approved a two-year provisional financial program without which it would be impossible to levy, after the end of 1949, what had become basic taxes. The new program, which abolished the sales tax on essential foods and made other small concessions, was to be submitted to popular approval before the end of 12 months.

On Sept. 11 two other significant events took place. On the one hand an owner of a chain of stores and Switzerland's most active demagogue in whipping up resentment against the government was elected as one of the canton of Zürich's two representatives in the Swiss upper house. On the other the Social Democrats lost control of the municipality of Zürich, which had for many years been regarded as a Socialist stronghold; a week later the devaluation of sterling heralded an employers' attack upon industrial workers' wages on the grounds that some of Switzerland's imports would now be cheaper.

On Dec. 15 Max Petitpierre was elected president of the confederation for 1950 and Eduard von Steiger, minister of justice and police, vice-president of the federal council. (E. WI.)

Education.—(1946–47) Elementary schools, pupils 433,332, teachers 13,692; secondary schools, pupils 75,546, teachers 3,043; universities (1947–48) 7, students 13,182, professors and lecturers 1,343; institutions of higher education 2, students 4,547, teachers 427.

Finance and Banking.—(Million francs) Budget: (1948 est.) revenue 1,800, expenditure 1,787; (1949 est.) revenue 1,423, expenditure 1,428. National debt (Dec. 1948): 10,959. Currency circulation (Sept. 1949): 4,702. Gold reserve (Sept. 1949): U.S. $1,423,000,000. Bank deposits (June 1949): 5,324,000,000 Fr. Monetary unit: franc with an exchange rate (Dec. 1949) of 4.30 Fr. to the U.S. dollar.

Foreign Trade.—Imports: (1948) 4,999,000,000 Fr.; exports: (1948) 3,435,000,000 Fr.

Transport and Communications.—Roads (1949): 10,500 mi. Licensed motor vehicles (Dec. 1948): cars 105,954, commercial vehicles 33,926. Railways (1947): 3,345 mi.; passenger traffic 212,990,000; goods traffic 18,213,000 metric tons. Shipping (Dec. 1948): number of merchant vessels 12, total tonnage 40,518. Air transport: miles flown (1947) 6,067,000, passenger miles (1948) 49,782,000, cargo net ton-miles (1948) 779,000. Telephones (1946): subscribers 744,997.

Agriculture.—Main crops (in metric tons): wheat (1948) 195,000; oats (1948) 65,000; barley (1948) 54,000; rye (1948) 27,000; maize (1947) 10,000; sugar, raw value (1947) 22,000; potatoes (1948) 1,141,000; tobacco (1947) 3,000; grapes (1948) 112,000. Livestock: cattle (April 1948) 1,424,000; pigs (April 1948) 767,000; sheep (April 1948) 170,000; goats (April 1947) 189,000; horses (April 1948) 142,000; chickens (April 1947) 5,025,000. Dairy produce (in metric tons): meat (1947) 133,000; milk (1948) 2,210,000; butter (1948) 13,200; cheese (1947) 41,000.

Industry.—(1948) Industrial establishments 11,364; persons employed 531,353. Electricity (1948) 8,640,000,000 kw.hr.

FILMS OF 1949.—*Life in the Mountains* (*Switzerland*) (Coronet Instructional Films); *Meet the Swiss* (Associated Film Artists).

Symington, William Stuart (1901–), U.S. secretary of the air force, was born on June 26 at Amherst, Mass., studied at Baltimore (Md.) City college, and after serving as a lieutenant in World War I attended Yale until 1923. He worked at an uncle's iron products concern in Rochester, N.Y., and in 1935 became president of the Rustless Iron and Steel Co. in Baltimore. In 1938 he became president of the Emerson Electric Manufacturing Co. in St. Louis, Mo. In 1945 he served successively as chairman of the Surplus War Property board and administrator of the Surplus Property administration. On Jan. 18, 1946, he was named assistant secretary of war for air and on Sept. 18, 1947, first secretary of the air force.

In 1949 Symington was the centre of a prolonged dispute over the merits of the B-36 bomber. In May Congressman James E. Van Zandt noted "reports" that Symington was to resign and head the company making the B-36, which had just been given substantial new contracts. Symington branded the charge a "lie." In August, before the house armed services committee, he challenged Van Zandt to repeat the charges away from the house floor, where they were privileged, to give him "proper recourse." In October the house committee approved the B-36 procurement program, and it was revealed that a civilian navy employee had originated the document that first launched the B-36 probe. On Oct. 18 Symington charged navy officials with imperiling U.S. security by distributing "falsehoods" about defense plans.

Symphony Orchestras: *see* Music.
Synthetic Products: *see* Agricultural Research Administration; Plastics Industry; Rayon and Other Synthetic Fibres; Rubber; Standards, National Bureau of.
Syphilis: *see* Venereal Diseases.

Syria. An independent Arab republic, formerly under French mandate, Syria is bounded by the Mediterranean sea, Turkey, Iraq, the Hashemite Kingdom of Jordan, Israel and Lebanon. Area: 72,560 sq.mi. Pop.: (1943 est.) 2,860,400, (1948 est.) 3,750,000. Religions: Moslem 85%; Christian 14%; other 1%. Languages: Arabic is the mother tongue of about 86% of the population, but Kurdish, Armenian, Turkish and Circassian are also spoken. Chief towns (1948 est.): Damascus (cap., 342,000); Aleppo (369,000); Homs (111,000); Hama (82,000); Latakia (the only port, 42,000). Presidents in 1949: Shukri Bey el-Quwatli (until March 30), Marshal Husni ez-Zaim (June 25–Aug. 14) and Hashem Bey Atassi (from Dec. 14); prime ministers in 1949: Khalid el-Azam (until March 30), Muhsin Barazi (June 26–Aug. 14), Hashem Bey Atassi (Aug. 15–Dec. 13), Nazim el-Kodsi (Dec. 24–25) and Khalid el-Azam (from Dec. 28).

History.—On March 30, 1949, a section of the army led by Col. Husni ez-Zaim, the chief of staff, overthrew the government, arresting Pres. Shukri Bey el-Quwatli, the prime minister Khalid el-Azam and other ministers. The frontiers were closed and a curfew was ordered. In the first of many broadcasts Colonel Zaim said that he had acted to save Syria from a despotic regime. On the following day he said that elections would be held as soon as possible; and the frontier with Lebanon was reopened. Zaim appeared before the chamber of deputies on April 1 and received a vote of confidence by a slight majority. Next day he announced its dissolution. A consultative commission was summoned to draft a new constitution.

On April 7 it was announced that the president and prime minister, still under detention, had resigned; and Zaim shortly after formed a cabinet in which he assumed the titles of prime minister, minister of defense and minister of the interior.

On June 25 a referendum was held; Zaim's regime and all its decrees were endorsed and he himself elected president. A government was then formed on June 26 with Muhsin Barazi as prime minister and minister of foreign affairs. The new president also took the rank of marshal.

Syrian finances were in a disastrous condition and heavy taxation was resorted to, including a 15% tax, retroactive to 1940, on the profits of all industrial concerns, businesses and sales of land or houses. Marshal Zaim began consciously to model himself on Kemal Atatürk and openly flouted older Moslem notions of propriety. His popularity began to decline.

On Aug. 14 a group of army officers led by Col. Sami Hinnawi forced their way into the president's and prime minister's residences, whence both were taken out and summarily shot. It was proclaimed that they had been condemned to death by a supreme war council presided over by Colonel Hinnawi and that the army had acted to save the country from the tyrant who had abused his authority, wasted public money and restricted personal freedom.

At a meeting in the defense ministry Hashem Bey Atassi, who had once been president under the French mandate, agreed to form a provisional government. The main duty of the new government was to pave the way for the early election of a constituent assembly to prepare a new constitution.

The government of Zaim on May 16 had ratified the agreement initialled on Feb. 2 between the previous government and the Arabian American Oil company granting wayleave for the Trans-Arabian pipe line. Early in June it signed agreements with the Anglo-Iranian Oil company granting wayleave for a pipe line from Abadan to the Mediterranean and providing for the construction of a refinery at Tartous on the Syrian coast. Hashem Bey Atassi stated on Aug. 16 that his government would neither endorse nor repudiate these agreements, which must come before the new assembly for its decision.

Armistice talks with Israel began in April and an armistice was signed on July 20. (C. He.)

Parliamentary elections took place on Nov. 15: only 39% of the votes were polled, women voting for the first time. In the result no party gained an absolute majority but the constituent assembly of 113 deputies was dominated by the Popular party, which gained 44 seats; the elections were boycotted by the National party; the Ba'th (left-wing) party secured 7 seats. On Dec. 12 the assembly elected Rushdi Kekhya its president, the cabinet resigned on Dec. 13 and on Dec. 14 Hashem Bey Atassi was elected provisional chief of state pending the drafting of a new constitution.

On Dec. 19 a third coup d'état was staged by the Syrian army. Former Colonel, now General Hinnawi, commander in chief of the Syrian army, and his brother-in-law, Assad Talass, undersecretary of state for foreign affairs, were arrested. The leader of the coup, Col. Adib Shishakli, 41-year-old commander of the 1st motorized brigade, declared that the arrested men were plotting against the republican regime in conjunction with foreign elements. Following the failure of Khalid el-Azam to form a cabinet, the premiership was entrusted on Dec. 24 to Nazim el-Kodsi, but he resigned the next day. Hashem Bey Atassi, the provisional chief of state, submitted his resignation on Dec. 26, but the next day the constituent assembly refused to accept it.

A new government was formed on Dec. 28 by Khalid el-Azam with Col. Akram Hawrani, leader of a newly founded Republican party, as minister of defense, and Sami Kabbara, an Independent, as minister of the interior.

Education.—(1946–47) Schools: state 870, pupils 127,502; private 344, pupils 48,133; foreign 55, pupils 5,725; university 1, students 1,722; institutions of higher education 3.

Finance and Banking.—Budget: (1948 est.) balanced at L.S. 128,000,000; (1949 est.) balanced at L.S. 131,000,000. Currency circulation (March 1949) L.S. 240,000,000, (March 1948) L.S. 182,000,000. Gold reserve of the Bank of Syria and Lebanon (June 1949): U.S. $2,800,000. Bank deposits (Dec. 1948) L.S. 93,000,000, (Dec. 1947) L.S. 91,000,000. Monetary unit: Syrian pound with an exchange rate of 45 cents U.S. (Nov. 1949).

Foreign Trade.—(1948, with Lebanon) Imports L.S. 468,000,000, exports L.S. 79,000,000.

Transport and Communications.—Roads (1946): 3,966 mi. Licensed motor vehicles (Dec. 1948): cars 3,951, commercial vehicles 3,385. Railways (Dec. 1948): 530.8 mi.

Agriculture.—Main crops (metric tons, 1948): wheat 550,000; barley 260,000; maize 30,000; rice (1947) 22,000; potatoes (1947) 15,000; cotton 7,000; tobacco 4,000; olives (1946) 42,000; lentils (1947) 39,000; broad beans (1947) 29,000. Livestock: sheep (Dec. 1947) 3,482,000; goats (Dec. 1946) 1,257,000; cattle (Dec. 1946) 371,000.

Syrup, Sorgo and Cane: *see* Sugar.

Table Tennis. In the 1949 world championships at Stockholm, Sweden, Feb. 4–10, the winners were: Swaythling cup for men's teams, Hungary (Ferenc Sido, Joszef Koczian, Ferenc Soos, Laszlo Varkonyi, George Lakatos, capt.); Corbillon cup for women's teams, U.S. (Peggy McLean, Thelma Thall, Mildred Shahian, Jimmy McClure, capt.); men's singles, Johnny Leach (England); women's singles, Gizi Farkas (Hungary), her third victory; men's doubles, Ivan Andreadis and Frantisek Tokar (Czechoslovakia); women's doubles, Helen Elliot (Scotland) and Gizi Farkas (Hungary); mixed doubles, Ferenc Sido and Gizi Farkas (Hungary); men's singles consolation, Ladislav Stipek (Czechoslovakia); women's singles consolation, Peggy McLean (U.S.). Twenty of the 40 nations belonging to the International Table Tennis federation were represented. For the first time South Americans contended for world titles, Brazil sending a men's team and Chileans entering the men's singles. The I.T.T.F. congress changed the service rule to require the ball to be lifted upward by the flat hand instead of dropped, and scheduled the 17th world championships for Budapest Jan. 29–Feb. 5, 1950. (C. Z.)

Taft, Robert Alphonso (1889–), U.S. senator, was born on Sept. 8 in Cincinnati, O., the son of William Howard Taft (27th president of the U.S.). He was graduated from Yale university, New Haven, Conn., in 1910 and Harvard law school, Cambridge, Mass., in 1913. During World War I he served as assistant counsel of the U.S. Food administration, and after the war helped organize relief services to Europe. He served in the Ohio house of representatives (1921–26) and the Ohio senate (1931–32). He was elected to the U.S. senate in 1938 and re-elected in 1944. He was a strong contender for the Republican nomination for president in 1940, 1944 and 1948.

Taft's principal activities in the senate in 1949 included his defense of the Taft-Hartley labour law; his initial support of, and eventual opposition to, the North Atlantic treaty; his efforts to reduce European Recovery program funds; his opposition to the administration's compulsory health-insurance plan, and his efforts to induce the president to use the powers of the Taft-Hartley law to end the autumn and winter coal strikes.

He voted in July against the North Atlantic treaty on grounds that it was "inextricably linked" with arms to Europe and might lead to immediate war with the U.S.S.R. He was successful in preventing administration efforts to rewrite the labour bill when the matter came to a vote in June. He was also one of the senators opposing further dismantling of German factories. As early as September he was industriously campaigning for re-election by making personal appearances in communities throughout Ohio.

Taft-Hartley Act: *see* LABOUR UNIONS; NATIONAL LABOR RELATIONS BOARD; UNITED STATES.
Tahiti: *see* FRENCH UNION.
Tanganyika: *see* BRITISH EAST AFRICA; TRUST TERRITORIES.
Tangerines: *see* FRUIT.

Tangier. Tangier is an international and demilitarized zone of Morocco on the southern shore of the Straits of Gibraltar. Area: 232 sq.mi. Pop.: (Dec. 1938 est.) 60,000; (1940 census) 102,306 including 16,509 Europeans; (mid-1949 est.) 150,000 including 30,000 Europeans. Languages: Arabic, French and Spanish. Religion: mainly Moslem. When the one-sided incorporation of Tangier into the Spanish zone of Morocco (Nov. 3, 1940) had been terminated on Oct. 11, 1945, the international administration was re-established with a committee of control composed of the resident consuls general of France, Great Britain, the United States, the U.S.S.R., Belgium, the Netherlands, Portugal and Spain. The soviet representative refused to take his seat on the committee as long as Franco Spain was represented. Italy was readmitted to the committee on March 8, 1948. The committee of control appointed a legislative assembly of 26 members (4 French, 4 Spaniards, 3 British, 3 Americans, 1 Belgian, 1 Dutchman, 1 Portuguese, 3 Jews and 6 Moslems). Tangier remained under the nominal sovereignty of the sultan of Morocco and his representative (the *mendoub*) was Hadj Mohammed el Tazi. Administrator (from Aug. 1948): Jonkheer H. L. F. C. van Vredenburch.

History.—In 1949 Tangier could be described as the only genuine international administration and the only absolutely free money market in the eastern hemisphere. The international regime functioned smoothly, the financial position was prosperous, with a large budget surplus, and the local debt was reduced to less than 0.5% of the yearly revenue. There was no income tax and revenue was raised largely by the flat-rate 12.5% duty on goods imported or in transit. The Moroccan franc, equal to the French franc, was the legal currency but any of the world currencies could be legally bought and sold. By Sept. 1949 the number of banks had increased from 10 before World War II to 81. Private enterprise was the key to Tangier's prosperity, but speculation rather than public-spirited investment seemed to be the rule.

Tariffs. The international pattern of tariffs altered little during 1949. The most important developments during the year were (1) the accession by 11 additional countries to the General Agreement on Tariffs and Trade; (2) the announcement of a third round of negotiations by the countries which were members of the general agreement, to be held in 1950; (3) projects by countries in several regions to establish customs unions; (4) adoption by additional countries of the League of Nations model customs nomenclature and (5) some further tendency to substitute ad valorem tariff rates for duties previously levied on a specific basis.

The most important tariff development during the year was the Annecy Conference on Tariffs and Trade, held in France between April 8 and Aug. 27, 1949. At Annecy, two separate, but related, projects were undertaken. One was the third session of the contracting parties to the General Agreement on Tariffs and Trade; participating in this meeting were the 23 countries which had become the contracting parties to the agreement negotiated at Geneva in 1947. This session was devoted primarily to the consideration of amendments to the general agreement and to matters of procedure and administration.

The other meeting, held simultaneously at Annecy, was the tariff negotiations meeting, attended not only by the 23 contracting parties but also by 11 other countries desiring to accede to the General Agreement on Tariffs and Trade. As at the Geneva conference in 1947, the tariff negotiations were conducted bilaterally; the resulting tariff concessions were ultimately combined to form the Annecy protocol to the general agreement.

Ultimately, 10 of the 11 countries which initially indicated their desire to accede to the General Agreement on Tariffs and Trade signed the Annecy protocol; Colombia had withdrawn its application. In all, 150 bilateral negotiations were concluded between the original contracting parties and the acceding countries and among the acceding countries themselves. Thus, the negotiations at Annecy expanded still further the area of world trade covered by commitments embodied in the general agreement. Moreover, the combined tariff concessions exchanged at Geneva and Annecy covered products accounting for more than two-thirds of the total import trade of the participating coun-ries and for more than half of the total trade of the world.

By the close of 1949, 22 of the 23 contracting parties had igned the Annecy protocol, thus deciding favourably the accesion of the ten acceding countries. Only two acceding countries —Haiti and Liberia—had signed the protocol, and, hence, only he schedules (*i.e.*, tariff concessions) for those two countries ecame effective on Jan. 1, 1950. The protocol provided that he schedules of the remaining eight countries—Denmark, the Dominican Republic, Finland, Greece, Italy, Nicaragua, Sweden and Uruguay—would become effective on the 30th day ollowing their signature.

Both the Havana charter for the International Trade organization and the general agreement embodied provisions designed o encourage the formation of customs unions as well as free-rade areas. Although but one such agreement had come into existence by the close of 1949, the year was, in effect, a period of gestation for customs unions; such arrangements were under consideration for (1) France and Italy, (2) France, Italy and he Benelux union, (3) the Scandinavian countries, (4) South Africa and Southern Rhodesia (5) and four South American countries under the name of Gran Colombia. In addition, extensive preparations had been made for a more comprehensive cusoms union embracing virtually all countries of western Europe.

The Benelux union, formed by Belgium, Luxembourg and the Netherlands, put their common tariff into effect in 1948; in view of the fact that various quantitative restrictions had not been eliminated between their respective territories, however, the hree countries had not yet completely fulfilled their objective of establishing a customs union in the full meaning of that term as set forth in the general agreement. The most ambitious project of this kind under consideration, however, was the proposed customs union of the O.E.E.C. (Organization for European Economic Cooperation) countries. The European customs union study group, constituted in 1947, continued its researches hroughout the year and made considerable progress toward solving the many complex problems which such a joint undertaking would entail, including the establishment of a common nomenclature, agreement on methods of determining dutiable value, determining the type of duties to be employed, the simplification of customs formalities and the like. (*See* also EUROPEAN UNION; ORGANIZATION FOR EUROPEAN ECONOMIC CO-OPERATION.)

France and Italy entered into a treaty in March 1949 to establish, within one year after ratification, a common tariff and to abolish all duties on Italo-French trade. A joint customs council was created to plan for, and supervise, the program. Later, exploratory discussions were held concerning the possibility of a broader union between France, Italy and the Benelux countries. Another project still largely in the discussion stage was nitiated among the Scandinavian countries at the Olso conference in 1948. During the year, also, the Union of South Africa and Southern Rhodesia announced that they had entered into an nterim agreement leading to the establishment of a customs union and the gradual elimination of import duties between the two countries. Similarly, the government of Colombia, together with Venezuela, Ecuador and Panamá, had taken steps preliminary to the formation of a customs union.

In Aug. 1949 the permanent tariff bureau of the European customs union study group submitted the 1949 edition of its recommended *Draft Tariff Nomenclature*. This project constituted a notable addition to the substantial list of countries or areas adopting or contemplating the adoption of the model customs tariff nomenclature first proposed by the League of Nations n 1931. By means of the "Geneva" draft, the League experts had undertaken to provide a standard classification which would serve as a simplified and unified international tariff schedule and which would meet modern economic requirements for all countries.

Some of the countries which had chosen to employ adaptations of the Geneva draft as a basis of their new tariffs were France, the Benelux countries and Iceland. Included among countries making earlier use, at least in part, of the League nomenclature were Czechoslovakia, Denmark, Finland, Egypt, Poland, Sweden and Uruguay. Italy used the new Brussels revision as the basis of its projected tariff, announced in the spring of 1949. Other countries reported to be contemplating the use of the League nomenclature were Argentina, Colombia, Greece, the Scandinavian customs union and Switzerland.

The new *Draft Tariff Nomenclature* was intended to be compulsory for all countries joining the proposed European customs union. In addition to various other differences, the new nomenclature had many refinements to adjust for advances in industrial and scientific techniques during the past two decades and thus attempted to provide satisfactory classification for new products such as plastics, synthetic textiles, antibiotics, aircraft and light metals.

The world-wide increase in prices which had occurred since World War II, had focused attention on one weakness of duties levied on a specific basis. Such duties quickly became out of date and consequently required frequent readjustment to prevent their burden from becoming heavier or lighter than it was intended to be. Moreover, during periods of rising prices, countries utilizing specific duties often found their revenue positions seriously impaired. Ad valorem rates of duty, on the other hand, always responded to changes in the price level inasmuch as they bore a constant relationship to the value of the imported merchandise.

During 1949, increases in duty in Bolivia, Peru and Iraq, all affecting a considerable range of items, appeared to have been made principally to restore the revenue-raising capacity of their tariffs or to reinstate the measure of protection originally afforded by the duties themselves.

Other countries made more extensive modifications of their tariff schedules by resorting more completely to ad valorem duties. Some of these changes were made in conjunction with the adoption of new nomenclatures. Typical of such action were the new tariffs of France and Benelux, which were based predominantly on ad valorem duties. During 1949, the most notable change-over of this type was that embodied in the newly projected tariff of Italy. Similarly the new import tariff instituted by Angola provided for the almost exclusive use of ad valorem duties. Saudi Arabia, however, added a general ad valorem levy to be collected in conjunction with the specific duties previously in force. Moreover, in recommending the Brussels nomenclature, the European customs union study group indicated that it should be employed in conjunction with an ad valorem schedule of duties.

Other than the commitments for tariff reductions at Annecy, the changes in duty effected by individual countries were not of sufficient moment to constitute any marked difference in the world trading system. Virtually no country made a general upward or downward revision of duties in 1949, except, as noted, to compensate for the effect of currency depreciation on schedules based on specific duties. Alterations affecting duties on a substantial range of commodities, however, were made in several countries. These changes resulted more frequently in increased than in decreased duties. Increases affecting a substantial list of commodities occurred in Chile, Honduras, Panamá, Venezuela, Finland, France, Portugal, Iraq, Malta, Indonesia and Spain. Decreases were made by Benelux, French Somaliland and Ceylon. As occurs almost every year, there were many piecemeal and minor changes raising or lowering rates of duty on individual import items in various countries. (*See* also INTERNATIONAL TRADE.)

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Taxation.

Transition from a postwar period of surplus revenues and debt reduction to the recurrence of deficits marked the federal government's fiscal year 1949. The Revenue act of 1948, enacted over a presidential veto, was estimated to have reduced federal revenues from individual income taxes by $5,000,000,000 per year. Faced, in Jan. 1949, with the possibility of a deficit, but chiefly as a measure of inflation control, Pres. Harry S. Truman recommended to the convening 81st congress measures to increase revenue from taxation by $4,000,000,000, chiefly by increased taxes on corporate income, supplemented by increased estate and gift taxes. The president also recommended careful study of the increase of rates for the individual income tax in the middle and upper brackets.

A congress which showed slight inclination to increase taxes and which had failed to act upon the recommendations of January received further presidential tax advice in July. By this time, the fiscal year 1949 had closed with a deficit neighbouring $1,800,000,000, and a recession in business activity and in employment had become clearly defined. Taxes as a measure for inflation control were no longer desired, and in his midyear economic report the president advised that "No major increase in taxes should be undertaken at this time." Estate and gift taxes were an exception, however, and the president again advised increases in their rates, to recover the revenue lost under the Revenue act of 1948. No response was forthcoming from congress.

By the end of 1949 the business decline of the early part of the year had levelled off, and the department of commerce estimated that the year would show a national income of $222,000,000,000, a decline of only 2% from 1948. Nevertheless, governmental expenditures had continued to run in excess of receipts and a deficit estimated at $5,500,000,000 was in prospect for fiscal 1950 unless authorized expenditures should be sharply curtailed or taxes increased. At the beginning of an election year, neither alternative seemed appealing to congressional opinion; greater support for a program of reducing federal excise taxes was manifest.

Legislation.—As tax rates were left unchanged in 1949, so, too, was most of the structure of the internal revenue code. The Tax Administration Act of 1949, enacted in August, made no drastic changes in tax procedure, but did add a degree of flexibility in administration which was expected to be helpful both to taxpayers and to the bureau of internal revenue. Under its terms, local collectors might be authorized to make refunds of taxes up to $10,000 without reference to the commissioner in Washington, D.C., and field representatives of the bureau might be authorized to issue assessments; the formality of an oath on returns, dispensed with for individual income taxpayers since 1942 in favour of a simple signed statement made under penalties of perjury, might be dispensed with on those returns, such as corporate, fiduciary and partnership income tax returns and estate and gift tax returns, on which it had continued to be required until 1949; the bookwork burden of making monthly returns which was imposed on many businesses subject to federal excise taxes was lightened by a provision authorizing the commissioner to prescribe the period which a return should cover—it was contemplated that in many cases excise tax returns would thereafter be on a quarterly rather than a monthly basis.

The Technical Changes act of 1949, enacted in October, contained few provisions of widespread significance. For individuals possessed of large fortunes, and for their advisers, it did attempt to provide a legislative settlement for a series of estate tax controversies which had come to a head with two decisions by a sharply divided supreme court in Jan. 1949 (the *Church* and *Spiegel* cases). One of these over-ruled a decision which had stood since 1930; the other approved what many lawyers and lower-court judges believed to be an extreme position taken by the bureau in its attempt to subject to estate taxes certain technically contingent family trust settlements made by the donor during his life. To the protests of many taxpayers that they had acted in reliance on the supreme court's 1930 decision in the one case, and on a more middle-of-the-road view of the tax law in the other, congress replied by a reformulation of the relevant estate tax provisions which were favourable to taxpayers with regard to past transactions, but which sanctioned the government's very broad interpretation of the taxing act with respect to transactions after Oct. 7, 1949. Some sceptical specialists, while applauding the spirit of compromise which moved congress to act, doubted that the legislation hastily drafted in the closing days of the session was formulated with a clarity adequate to dispel the controversy frequently engendered by the conflict between the acquisitive instincts of the bureau of internal revenue and the careful thrift of estate planners in cases often involving estate taxes running into tens or hundreds of thousands of dollars.

Tax Treaties.—Carrying forward a policy designed to facilitate international trade, to encourage international investment and enterprise, the state department and the bureau of internal revenue continued to negotiate with other nations treaties designed to eliminate or minimize the barrier of international double taxation, particularly in the fields of income and estate taxation, and at the same time to prevent evasion. At the beginning of 1949 there were in effect income tax treaties with Denmark, France, the Netherlands and Sweden, and income and estate tax treaties with Canada and the United Kingdom. Awaiting ratification were income tax treaties with Belgium and New Zealand, an income and estate tax treaty with the Union of South Africa and a treaty, plus an amendatory protocol, with France covering estate taxes and modifying the earlier income tax treaty. Negotiations with other nations were in progress.

In 1949 ratifications of the pending treaty with France were exchanged, and it became effective. The income tax treaty with Belgium, signed in 1948, was submitted to the senate, and an income and estate tax treaty with Norway was signed and submitted for ratification. Preliminary conversations, or negotiations, looking toward income and estate tax treaties with three Latin-American nations, Brazil, Colombia and Cuba, were announced by the state department in June and July, and with Argentina in Dec. 1949.

Court Decisions.—The supreme court continued to exercise sparingly its discretionary jurisdiction to review tax cases; in those which had been reviewed by the supreme court, the government had maintained, but with one perhaps notable exception, a uniform record of success in recent years. This almost unbroken record of government victories in supreme court tax litigation had probably been of more widespread and pervasive effect in the administration of the tax laws than had been the decision in any specific case. The 1949 tax decisions for the most part involved points not of importance to the generality of taxpayers, corporate or individual. The decision which was probably of most widespread importance was the first in several years in which the net effect was a defeat for the government. This was a case involving family partnerships, *Commissioner* v. *Culbertson.* In 1946 the supreme court, in the *Tower* and *Lusthaus* cases, approved, in each case, the efforts of the commissioner to disregard a family partnership and tax to the husband the entire partnership income from a husband-and-wife partnership. The result of this disregard of the partnership was that the aggregate income thus attributed to one partner fell into higher tax brackets and increased the net yield to the government. To brush aside the partnership, the court purported to look to the original source of capital contributed to the partnership, services to the partnership and management control; it gave little or no weight to the fact that the partnership was an effective one under the state law of its origin, entailing liability upon each partner and enforceable rights to income and to partnership property upon dissolution. The commissioner thereafter applied this policy with vigour, and the rather indefinite criteria of judgment left the tax status of most family partnerships in doubt, or with the certainty only that the entire partnership income would be taxed to one partner. The Revenue act of 1948, permitting split income returns for husband and wife, minimized the importance of the *Tower* and *Lusthaus* decisions in husband and wife partnerships, but did not deprive them of all force. Family businesses are often operated in noncorporate form, and frequently make the transition from generation to generation by a series of father-son partnerships. The *Culbertson* case involved a situation of this type; the commissioner's attempt to reconstruct the family ranching partnership, organized and publicly announced a year earlier, by taxing the whole income to the father and eliminating, for tax purposes, two sons absent in the army and two younger sons who devoted their summers, but only their summers, to the ranch, was unsuccessful. In an opinion which seemed expressive of a new attitude, somewhat less ready than formerly to uphold the administrative determinations of the commissioner, the court indicated that the test of an effective partnership, for tax as for other purposes, was a joining together in an enterprise to share profits or losses.

State and Local Taxation.—Increasing costs of government and increasing demands upon government had caused the steady increase in state and local taxes to continue. Distressing to many economists and other students of government was the frequency with which state and local governments seeking new or increased revenues turned to consumer taxes—either general or special sales taxes, which tended to bear most heavily upon lower and middle-income groups.

Indicative of the trend of state and local taxation and the increasingly important part such taxes were playing in the general fiscal problem were figures released in 1949 showing that though federal tax revenues (excluding pay-roll taxes for social security) reached their peak of $42,477,000,000 in the wartime year of 1945, and thereafter dropped off to less than $40,000,000,000 annually, total federal, state and local tax revenues (excluding pay-roll taxes) reached a peak of $53,246,000,000 in postwar 1948, as compared with $51,670,000,000 in 1945. Estimates of 1949 total revenues put them on levels comparable with those of 1948. Figures released by the bureau of the census in Nov. 1949 show with striking clarity the postwar trend in state taxation, and the part sales and gross receipts taxes play in it, as follows:

	Amount Collected (In millions) 1949 (est.)	1948	1947	1946
State tax collections (excluding unemployment compensation)	$7,369	$6,732	$5,721	$4,935
Sales and gross receipts taxes	4,363	4,045	3,415	2,806

"GUEST OF HONOR," a 1949 cartoon by Justus of the *Minneapolis Star*

In per capita terms, the burden of state taxes (including pay-roll taxes) for 1949 ranged from a high of $92.19 per person in Louisiana, to a low of $35.92 in Nebraska, with an average of $57.43.

The change in the level of state taxation may be observed by comparing these with 1937 figures, when California ranked highest with a $51.99 burden per capita and South Carolina lowest with $11.35, and the average was $30.75.

State legislative activity in 1949 was frequently directed toward increasing rates on the more prevalent forms of taxation. Gasoline taxes existed in every state, ranging from a low of 2 cents per gallon in Missouri (subject to referendum action in 1950 which might raise it to 4 cents) to a high of 9 cents in Louisiana. In 1949, 13 states increased their rates, the most common increase being 1 cent per gallon. Cigarette taxes existed in 39 states prior to 1949, ranging from a low of 1 cent per standard pack in West Virginia to a high of 8 cents in Louisiana. In 1949 such taxes were imposed for the first time by Delaware (2 cents) and the District of Columbia (1 cent); ten states increased their rates, and Arkansas decreased its rate from 6 cents to 4 cents. General sales, use or gross receipts taxes were imposed by 30 states and the District of Columbia. Florida and the District of Columbia were 1949 additions to the ranks of those jurisdictions imposing such taxes; rates were increased in four states in 1949. Taxes on personal income of varying scope were imposed by 32 states and the District of Columbia; 1949 witnessed rate increases in 9 of these states. In addition to such state taxes, a growing number of cities and counties imposed additional local taxes on sales generally, or on the sale of such products as cigarettes and gasoline.

One of the difficulties in the collection of state and local taxes had been that in the case of migratory taxpayers, the courts of one state usually would not entertain a suit by another state or its municipal subdivisions to collect taxes asserted to be owed. To facilitate collection in such cases three states (Maine, Minnesota and Tennessee) in 1949 enacted statutes permitting those states granting a reciprocal privilege to bring suits for taxes in their courts. Alabama, Oregon and Wisconsin had enacted similar legislation in 1947, and Missouri and Oklahoma in earlier years. Bills proposing such legislation were introduced in Connecticut, Florida and Iowa in 1949 but failed of passage.

To facilitate collection of state cigarette taxes on cigarettes purchased by mail order from states with low cigarette taxes, or none at all, congress passed a bill requiring interstate shippers of cigarettes to supply appropriate information to the tax authorities of the state of destination.

Canada.—A new income tax act, the reduction of individual income tax rates and the increase of personal exemptions, a changed corporate income tax rate structure and the repeal or reduction of many excise taxes marked important changes in the dominion tax structure during 1949.

On Jan. 1, 1949, the Income Tax act, enacted in June 1948, became effective in the Dominion and replaced the Income War Tax act, which, with many amendments, had been in effect since 1917. The new act was not intended to effect great change in substance but to codify and clarify the old, and particularly to limit the scope of administrative discretion; the broad scope of ministerial discretion permitted had been a basis of frequent criticism of the former act. Administrative regulations were allowed under the new act, and were issued from time to time in 1949, but the power to make them was limited to the governor in council, and their publication in the *Canada Gazette* was required.

Of more immediate importance to Canadian taxpayers were the tax reductions presented in the budget resolutions and subsequently implemented by statute. Personal exemptions for the income tax were raised from $1,500 to $2,000 for married persons, and from $750 to $1,000 for others; exemptions for dependents were raised from $100 and $300 to $150 and $400. The minister commented that this would relieve about 750,000 taxpayers of all income tax liability. Personal income tax rates were reduced to range from 15% on taxable income of $1,000 or less to 80% on taxable income of more than $400,000; the former rates had ranged from 10% on the first $100 of taxable income, but reached 20% at the $500 level, and applied the maximum rate of 80% to taxable income in excess of $250,000. Corporation income tax rates were changed from a flat 30% rate to 10% on the first $10,000 of taxable income, and 33% on all over that. Counterbalancing the resultant increase in corporate taxes for corporations with income of more than $77,000 was a provision allowing an individual taxpayer to deduct from his income tax otherwise payable 10% of his income from dividends paid by corporations liable for the corporation income tax, so that the corporation's increased tax would be more than offset by the credit allowed its shareholders if appreciable dividends were declared.

Reductions in excise taxes correspond to income tax reductions. Among other reductions, the tax on luggage, fountain pens, automatic pencils and desk accessories was reduced from 35% to 10%; the tax on toilet articles, jewelery, china and similar wares was reduced from 25% to 10%; taxes on cable, telephone and telegraph messages, on transportation tickets and accommodations, as well as on soft drinks, chocolate, candy, confectionery and chewing gum were removed altogether. (*See* also BUDGET, NATIONAL; DEBT, NATIONAL; LAW.)

(E. J. BR.)

Great Britain.—In the United Kingdom taxation receipts continued their uninterrupted postwar rise. Actual receipts during 1948–49 amounted to £3,667,000,000, an increase of £155,000,000 compared with budgetary estimates. As in previous years this increase was mainly the result of the satisfactory yield of the income tax which was £1,367,000,000, compared with £1,189,000,000 for the previous fiscal year, and exceeded budgetary estimates by £58,000,000. Practically all other main taxation items showed increases. This was partly caused by the rise of prices and partly by the increase in production. Progress by the inland revenue department in its effort to catch up with wartime arrears also helped. On the basis of existing taxation the total receipts from taxes during 1949–50 were estimated at £3,655,000,000, a decline, on balance, of about £12,500,000, the result of the anticipated fall of the yield of the special contribution, death duties, stamp duties, profits tax and excise. On the other hand, a further increase of the proceeds of income tax, surtax and customs revenue was anticipated. Changes in taxation in the budget for 1949–50 disappointed those who expected substantial concessions in order to compensate workmen for abstaining from pressing wage claims. The only concession of this nature was a slight reduction of the beer duty. The proposed simplification of death duties was expected to produce an additional yield of £11,000,000; but the repeal of some obsolete stamp duties was expected to cost £1,500,000. After allowing for these and other changes the taxation receipts for 1949–50 were estimated at £3,632,000,000.

During the three quarters ended Dec. 31, 1949, the yield of income tax at £562,100,000 showed an increase of £3,800,000 compared with the corresponding period of 1948. Surtax increased by £12,300,000 to £48,300,000, death duties by £11,500,000 to £143,400,000, profits tax by £60,300,000 to £200,200,000. On the other hand, stamp duties yielded £3,400,000 less at £38,900,000, excess profits tax declined by £37,700,000 to £31,800,000, special contribution by £15,300,000 to £17,100,000, customs by £13,000,000 to £611,900,000 and excise duties by £25,100,000 to £526,700,000. Generally speaking, direct taxes showed better results than indirect taxes.

Commonwealth.—In Australia total revenue for the year ended June 30, 1949, was £A535,000,000, which was £A43,000,000 above budgetary estimates. It reflected the rapid rise in commercial turnover and incomes but was partly caused by the overtaking of taxation arrears. Revenue from the sales tax was particularly buoyant.

In Ceylon, on July 14, 1949, the finance minister announced the government's decision to reduce customs duties and income tax on lower incomes. This was decided in spite of the reduction of the revenue surplus from Rs. 32,000,000 in 1948–49 to Rs. 2,000,000 in the estimates for 1949–50.

India's budgetary deficit for 1949–50 was estimated at £20,000,000. To deal with it, the government introduced new excise duties on tea, cigarettes, coffee and tires. The clothes export duty was converted into an ad valorem duty of 25%; handloom clothes were exempted. Export duties on oilseed and vegetable oil and import duties on automobiles were raised; the latter from 45% to 50%.

In New Zealand taxation yielded in 1948–49 £N.Z.130,400,000 and estimates for 1949–50 were £N.Z.132,700,000. For some years in succession the yields of taxation had exceeded budgetary estimates, because the finance minister had not budgeted for the continued rise of prices and of business activity. In the budget for 1949–50 some moderate concessions were made in respect of the amusement tax.

Europe.—In the Czechoslovak budget for 1949 the outstanding change in taxation was the unification of the various types of purchase tax, such as turnover tax, luxury tax, railway transport tax, etc. The new unified tax was expected to yield 50,713,000,000 koruny, compared with the yield of the old turnover tax of 12,426,000,000 koruny in 1948. Considering that the total revenue in 1949 was estimated at 89,320,000,000 koruny, against 56,895,000,000 koruny in 1948, it became evident that the country's fiscal system was now based overwhelmngly on this new turnover tax. Accordingly, the yield of direct axes was expected to decline from 16,621,000,000 koruny to 14,791,000,000 koruny and that of stamps from 4,679,000,000 koruny to 2,094,000,000 koruny.

In France total revenue for the fiscal year 1948–49 was estimated at 1,250,000,000,000 fr., compared with 924,000,000,000 fr. for 1947–48. Taxation receipts alone increased from 769,000,000,000 fr. to 1,069,000,000,000 fr. Devaluation of the franc in 1948 and the continuous rise in prices was chiefly responsible for this rise. At the end of 1949 the government introduced new taxes to eliminate the budgetary deficit. They included a tax on transactions of government transactions—an unusual instance of a government taxing itself—a tax on undistributed profits and a tax on road transport.

In Italy the government was experimenting with a change in the system of assessment of income tax. Hitherto the presumption had been that everybody declared only a fraction of his income. In July 1949 the finance minister, Enzio Vanoni, proposed a "new deal" to taxpayers for a more equitable assessment of taxable incomes. Under the existing system those who were honest enough to declare their full earnings, or those who were not in a position to conceal part of their earnings, bore an unduly heavy burden. In the future the taxpayers were to be pressed for more accurate information but in return the rates would be lowered. Thus, for an income of L. 1,000,000 the rate would be reduced from 18% to 13%. Notwithstanding such a substantial reduction the government hoped to increase the yield of income tax through less evasion. The new system was to operate retrospectively; but if the evasion was not in excess of a certain amount there would be no supplementary assessment on past incomes.

The Netherlands, having succeeded in balancing its budget, adopted the course of shifting the burden slightly from direct to indirect taxation. There was a moderate cut in the tax on income from commerce and wages and an increase of the turnover tax by ½% to 3½%. The gasoline excise duty was also raised. The formula adopted was that taxation must be shifted from earning to spending, to strike a fairer balance between producers and consumers.

Portugal introduced a new purchase tax for the first time in its fiscal history. The object was to use the proceeds to create an export subsidy fund. There was to be a tax on motor vehicles, ranging between 15% and 50% of their retail prices.

Spain increased direct taxation by 5% from the beginning of 1949, in order to provide means to extend social insurance. In the budget for 1949 direct taxation was estimated at 6,185,000,000 pesetas and indirect taxation at 6,553,000,000 pesetas.

During the brief period between the devaluation of many commonwealth and European currencies and the end of the calendar year there was no evidence of any change in the yield of taxation. Nor did measures adopted by most governments following devaluation include new taxation. For the most part the budgetary effort to ensure the success of devaluation aimed at cuts in expenditure rather than the introduction of new taxes, the assumption being that the rise in prices as a consequence of devaluation would in any case ensure an increased yield of both direct and indirect taxes. An alternative to raising taxes was the raising of prices of controlled goods (for example, bread in Great Britain and gasoline in France) to absorb consumers' purchasing power and to avoid increasing the burden of subsidies. (P. Eg.)

Tea.

Apparent civilian per capita consumption of tea (all imported) in the U.S. in 1949 was five-tenths pound, 102% as much as in 1948, but only 84% of the prewar level. Imports, mostly from India and Ceylon, amounted to 89,062,000 lb. in 1948–49, 14% larger than the 78,449,000 lb. of the previous year. But imports for the calendar year 1949 were indicated at a level of about 89,000,000 lb., 3% less than the 91,378,476 lb. of calendar year 1948.

World tea production in 1949 was preliminarily estimated at nearly 1,000,000,000 lb., slightly more than prewar and 1948. Preliminary figures indicated that the 1949 crop was larger in North India and Indonesia, not much changed elsewhere.

Tea prices were strong in the latter part of the year, influenced largely by increased consumption in the United Kingdom, where the ration was increased. (J. K. R.)

Technicolor: *see* Motion Pictures.

Telegraphy.

A program of mechanization and other plant improvements costing $80,000,000 and increasing the capacity and vastly improving the speed and efficiency of U.S. telegraph service was pressed forward toward completion in 1949.

W. P. Marshall, president of the Western Union Telegraph company, proposed to congress the adoption and implementation of a national policy directed toward a single system of domestic and international record communications. The system would be under private management, with appropriate government regulation for the protection of the public and with Western Union as the nucleus around which such a system would be developed, ensuring continuing and more effective competition with telephone and air-mail services.

To accomplish this result, it was proposed that:

1. Subject to enabling legislation and other essential considerations, Western Union would offer to purchase the international telegraph facilities of the American Cable and Radio corporation, RCA Communications, Inc., and any other international telegraph carrier operating in the United States.
2. Subject to the approval and co-operation of the national defense establishment and government policy considerations, Western Union would provide a comprehensive system for handling all of the government-operated communications. This would be an integral part of a co-ordinated system of domestic communications which would utilize all new technological methods and be geared to military requirements.
3. Subject to financial negotiations and regulatory considerations, Western Union would purchase the telegraph business of the American Telephone and Telegraph company, including primarily the business known as Teletypewriter Exchange service (TWX).
4. To the extent that required private capital might not be available to ensure accomplishment of these objectives, long-term government financing would be provided at an interest rate designed to compensate the government for the cost of the money borrowed.

Congress was urged to remove the 25% tax imposed on telegraph users during World War II to discourage use of the service thus freeing facilities for the handling of vital war traffic.

High-Speed Switching System.—Three big selective high-speed switching centres were placed in operation in 1949 at Detroit, Mich., Los Angeles, Calif., and New Orleans, La., completing 14 of a national network of 15 centres, each to handle telegrams to and from one or more states. The fifteenth was planned for Portland, Oreg. The centre at Oakland, serving California, was expanded and improved by new installations in 1949. In the switching system, telegrams are typed only at the point of origin and then flashed through the switching centres to their destinations without manual retransmission.

An important improvement installed in 1949 was a means of switching messages through the message centres and over the lines to patrons' offices. The Western Union system uses tape teleprinter operation, but the teleprinters in many customers' offices are page printers. For that reason, when telegrams are switched to customers with page printers, automatic machines are used to translate the characters not having common locations on tape and page teleprinter keyboards and to move the page up at the end of each line.

Another new feature of the centres was a system for switching "books" (a number of telegrams with the same text); this included equipment which automatically inserts the addresses while transmitting "book" messages.

Carrier Systems.—Through the use of carrier systems, it became possible to send as many as 288 telegrams simultaneously over a single pair of wires, or more than 2,000 over a microwave radio beam system such as Western Union had in operation, with towers about 30 mi. apart, between New York, N.Y., Philadelphia, Pa., Washington, D.C., and Pittsburgh, Pa. To interconnect the new switching centres many additional carrier systems were installed in 1949. About 1,650,000 channel mi. of carrier systems were in operation, and 200,000 more were planned for 1950.

Desk-Fax.—To speed the pickup and delivery of telegrams, and make telegraph service even more convenient and accessible, the Desk-Fax, a miniature facsimile machine, was installed in business offices in nine cities in 1949. The Desk-Fax brings world-wide telegraph and cable facilities within arm's reach of the customer.

Privately Leased Wire Systems.—Private wire telegraph systems were leased to an additional number of large companies in 1949. Some previously established systems were expanded and modernized with push-button and automatic switching techniques. New high-speed switching centres were installed in the nation-wide networks leased to the United States Steel corporation, United Air Lines and General Electric company.

Rates.—Conforming to the desire of the Federal Communications commission to eliminate inequalities in the telegraph rate structure, Western Union filed with the commission on Dec. 15 new rates providing equal charges for equal distances, to become effective Feb. 1, 1950.

(W. P. Ma.)

British Commonwealth.—The final legislative step in the co-ordination of the nationalized overseas services in the United Kingdom, Canada, Australia, New Zealand, India and Southern Rhodesia was taken on May 31, 1949, when the Commonwealth Telegraphs bill became law. This act provided for the integration on April 1, 1950, of the operations of Cable and Wireless, Ltd., in the United Kingdom with those of the post office and for the establishment of the Commonwealth Telecommunications board to co-ordinate the operations of the services in various countries. After April 1, 1950, Cable and Wireless, Ltd., would remain as a government-owned commercial company operating the cable network and the wireless services in the British colonies and certain foreign countries. It would continue to operate the United Kingdom cable station.

Considerable progress was made in the development, production and distribution of new equipment, including cable channelling units, cable code converting transmitters and double current cable code sending and receiving units. Further progress was also made in 1949 toward maintaining and developing the company's 155,000 nautical miles cable system. Direct cable service was restored between London and Hongkong, avoiding the need for retransmitting messages at Singapore. Considerable work was done towards restoring the Mediterranean, South American and West Indian systems.

On the wireless side, progress was made toward expanding the Barbados and Colombo relay stations and toward building a relay station at Nairobi, Kenya, to provide an alternative circuit for the London-Singapore direct service.

The whole of the external telecommunications services at Hongkong was co-ordinated. Several new wireless circuits were opened to meet requirements arising from the developments in China. Additional radiotelephone circuits were opened to San Francisco, Calif., and via Colombo, Cey., to London. The company assisted the government of Pakistan to establish overseas radiotelegraph and radiotelephone circuits.

New transmitting and receiving stations were erected in Cyprus. In addition to radiotelegraph and radiotelephone circuits, Cable and Wireless (which operated the inland telephone as well as the oversea services) took over responsibility for civil aviation communications in the colony.

Following the opening in late 1948 of radiotelephone service between Accra, Go. Cst., and Lagos, Nig., both stations were linked with Sierra Leone early in 1949; a circuit was opened between Bathurst and the other three stations; and, through Accra, connection was provided with London. Many extensions were opened to the West Indian radiotelephone services. On Sept. 1, Cable and Wireless opened a direct phototelegraph circuit between Athens, Greece, and London.

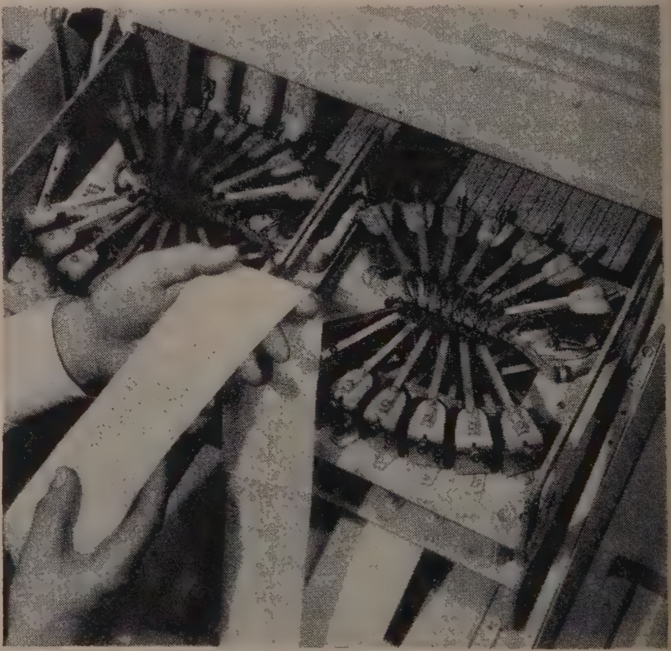
The United Kingdom was a party to the International Telegraph conference which met in Paris from May–July, 1949. The principal decisions (to come into force on July 1, 1950) were the unification of rates for ordinary telegrams (plain, code and cypher), the abolition of deferred telegrams and the amalgamation of the existing two classes of letter telegrams in the extra-European regime in a single class. Subsequently a British Commonwealth-United States governmental Telecommunication meeting was held in London to revise the Bermuda agreement of 1945.

(A. S. A.)

Telephone.

With further substantial results produced by postwar improvement and expansion, U.S. telephone service at the end of 1949 was generally the best and most complete in history. As 1950 began, there were more than 40,000,000 telephones and 160,000,000 conversations a day; there was no distance limit.

Long distance calls, as 1949 ended, were being completed at an average speed of about one and one-half minutes, close to the prewar best. A contributing factor was the further extension of operator toll dialing. A record 95% of all toll calls were being put through while the calling person held the line. Local service also approached the prewar mark in quality, with increased operator experience and the installation of large amounts



TAPE-PUNCHING EQUIPMENT for the automatic message accounting system devised by the Bell Telephone laboratories for use in telephone billing. The new system was introduced in the Philadelphia, Pa., area late in 1948 and was being extended to other parts of the Bell system in 1949

Telephones in Countries of the World, Jan. 1, 1949

Country	Total Telephones			Ownership		Automatic (Dial)	
	Number	Per cent of total world	Per 100 population	Government	Private	Number	Per cent of total tels.
North America:							
United States	38,205,483	58.1	26.1	—	38,205,483	23,830,000	62.4
Alaska	12,614	*	13.3	36	12,578	815	6.5
Canada	2,458,000	3.7	18.8	308,700	2,149,300	1,384,000	56.3
Central America	40,900	*	0.4	17,000	23,900	11,400	27.9
Cuba	100,700	0.2	1.9	503	100,197	83,246	82.7
Jamaica	10,275	*	0.8	—	10,275	9,527	92.7
Mexico	248,000	0.4	1.0	835	247,165	169,630	68.4
Puerto Rico	34,763	*	1.6	1,794	32,969	17,467	50.2
Trinidad and Tobago	12,216	*	2.0	—	12,216	7,503	61.4
Other places	42,100	*	0.6	17,400	24,700	17,850	42.4
South America:							
Argentina	679,335	1.0	4.1	599,262	80,073	500,872	73.7
Bolivia	7,860	*	0.2	—	7,860	7,415	94.3
Brazil	484,300	0.7	1.0	1,500	482,800	360,000	74.3
Chile	126,033	0.2	2.2	—	126,033	83,693	66.4
Colombia	70,300	0.1	0.6	61,800	8,500	29,950	42.6
Ecuador¶	18,882	*	0.5	13,927	4,955	4,900	26.0
Paraguay	4,986	*	0.4	4,986	—	4,346	87.2
Peru	44,400	*	0.6	—	44,400	35,085	79.0
Uruguay	77,686	0.1	3.3	76,146	1,540	55,879	71.9
Venezuela	55,272	*	1.2	1,258	54,014	50,755	91.8
Other places	5,007	*	0.8	5,007	—	171	3.4
Europe:							
Austria	350,592	0.5	5.0	350,592	—	285,335	81.4
Belgium	601,614	0.9	7.0	601,614	—	443,638	73.7
Bulgaria†	54,347	*	0.8	54,347	—	23,000	42.3
Czechoslovakia†	350,708	0.5	2.9	350,708	—	208,319	59.4
Denmark	644,975	1.0	15.3	32,196‡	612,779	259,958	40.3
Finland	302,104	0.5	7.3	34,604	267,500	158,483	52.5
France	2,232,536	3.4	5.5	2,232,536	—	1,336,790	59.9
Germany							
American Zone	630,756	1.0	3.8	630,756	—	283,955	45.0
British Zone	1,160,924	1.8	5.1	1,160,924	—	597,146	51.4
French Zone	182,356	0.3	3.4	182,356	—	80,000	43.9
Greece	65,078	*	0.8	3,516	61,562	57,217§	87.9
Hungary†	106,768	0.2	1.2	106,768	—	77,492	72.6
Iceland	17,632	*	12.8	17,632	—	10,715	60.8
Ireland	66,806	0.1	2.2	66,806	—	38,325	57.4
Italy	1,014,321	1.5	2.2	—	1,014,321	908,448	89.6
Luxembourg	20,287	*	7.0	20,287	—	14,567	71.8
Netherlands	632,667	1.0	6.4	632,667	—	557,839	88.2
Norway‖	404,985	0.6	12.7	336,404	68,581	234,760	58.0
Poland	212,000	0.3	0.9	212,000	—	142,000	67.0
Portugal	124,305	0.2	1.5	36,178	88,127	61,259	49.3
Spain	552,467	0.8	2.0	—	552,467	401,800	72.7
Sweden	1,531,473	2.3	22.1	1,529,396	2,077	918,135	60.0
Switzerland	794,832	1.2	17.2	794,832	—	754,056	94.9
United Kingdom‡	4,922,816	7.5	9.8	4,922,816	—	3,420,395	69.5
Other places	1,990,000	3.0	0.7	1,990,000	—	711,500	35.8
Asia:							
China†	244,028	0.4	*	84,028	160,000	178,000	72.9
India¶	126,412	0.2	*	124,900	1,512	53,000	41.9
Israel	20,701	*	2.4	20,701	—	18,400	88.9
Japan‡	1,348,552	2.0	1.7	1,348,552	—	449,517	33.3
Pakistan	16,454	*	*	16,454	—	9,124	55.5
Turkey	52,423	*	0.3	52,423	—	46,010	87.8
Other places	147,000	0.2	0.1	92,000	55,000	81,000	55.1
Africa:							
Algeria	81,800	0.1	0.9	81,800	—	56,665	69.3
Egypt†	98,093	0.1	0.5	98,093	—	65,268	66.5
Morocco	49,034	*	0.5	40,234	8,800	31,250	63.7
Tunisia	22,026	*	0.6	22,026	—	13,005	59.0
Union of South Africa	384,633	0.6	3.2	384,633	—	267,961	69.7
Other places	97,000	0.1	*	96,745	255	38,100	39.3
Oceania:							
Australia	995,773	1.5	12.8	995,773	—	602,442	60.5
Hawaii	94,559	0.1	17.5	—	94,559	87,069	92.1
Netherlands Indies♀	29,438	*	*	29,438	—	713	2.4
New Zealand‡	322,757	0.5	17.2	322,757	—	186,300	57.7
Philippine Republic	11,534	*	*	—	11,534	8,771	76.0
Other places	20,700	*	*	20,700	—	3,100	15.0

*Less than 0.1%. †Jan. 1, 1948. ‡March 31, 1949. §Subscribers only. ‖June 30, 1948. ¶March 31, 1948.
♀Territory under authority of Netherlands Indies government.
Source: "Telephone Statistics of the World" (American Telephone and Telegraph Company, Jan. 1, 1949).

of new plant and equipment combining to bring speed and accuracy close to all-time top levels.

More than 2,400,000 telephones were added to the U.S. telephone network in 1949, bringing the number added since the war to more than 13,500,000. Some 375,000 of the 1949 additions were in rural areas. Of the total of about 40,600,000 telephones, more than 33,300,000 were served by the Bell system and the remainder by 5,700 independently-owned telephone companies.

The latest available world statistics, compiled as of Jan. 1, 1949, estimated the world total at nearly 66,000,000 telephones, of which nearly 60% were in the United States (*see* table).

Plant and Equipment.—The large volume of construction required to meet the public's telephone needs was indicated by the fact that, in the Bell system, more than 800 building construction projects, ranging in size from small community dial offices to large central office buildings, were completed in 1949. Some of the projects involved additions and alterations to existing buildings.

Shipments to the Bell system operating companies during the year by Western Electric company, the system's manufacturing and supply unit, included nearly 50,000,000,000 conductor feet of exchange cable and enough local central office equipment to serve about 2,300,000 telephones. Conversions of central offices from manual to dial operation continued, bringing the proportion of dial telephones in the Bell system to well over 70%.

Nearly 9,000 toll circuits were added during 1949 by the Bell companies, including the Long Lines department of the American Telephone and Telegraph company, bringing the Bell system total of such circuits to about 100,000.

As 1949 ended, 70% of the applications for telephone service were being filled the same month as received. Because of the continued high demand, the Bell system still had about 790,000 unfilled orders on hand, and more than 2,000,000 requests for individual lines or other higher classes of service. However, the telephone companies in many areas were nearly clear of held orders for the first time since before World War II.

The telephone industry spent about $1,150,000,000 in 1949 for service improvement and expansion, bringing to about $10,500,000,000 the total amount of money invested in plant and equipment. This required the raising of hundreds of millions of dollars in new capital during the year. Many telephone companies, still trying to catch up with higher postwar operating costs, continued to find it necessary to seek increased telephone rates in order to obtain earnings sufficient to attract and protect equity capital.

Rural Developments.—With about 375,000 telephones added in rural areas in 1949, about half of the nation's farms now had telephone service—twice as many as in 1940. As 1950 began, rural telephone gain in the Bell system was continuing at the rate of more than 1,000 each working day; 76% of all Bell system rural customers were on lines with eight parties or less; 90% had improved ringing (they heard the rings of fewer parties on their line); and 90% were using lift-the-receiver telephones instead of the crank-type.

Technical Developments.—The year also saw significant progress in the development of new techniques and devices aimed at improving service and making it as economical as possible to the user. Bell Telephone laboratories developed a new and better telephone instrument. Field tests of a limited number of these telephones were scheduled to be carried on during 1950.

An important transmission feature was an equalizer which automatically adjusts the sound level to compensate in part for the distance between the telephone and the central office. The dial has the number and letter prefixes outside the finger wheel and is sloped at a lower angle for better visibility. A ringer volume control enables the subscriber to adjust the loudness of the ringing tone to suit his needs.

The laboratories also developed a more comfortable and better lighted and ventilated telephone booth. A sealed-in ceiling light fixture equipped with a directive lens concentrates light on the writing shelf and telephone instrument. A louver in the door frame header provides for ventilation; optional equipment includes a blower which changes the air approximately three times a minute.

A new vacuum tube, capable of relaying a wider band of radio microwave signals over and over again to span longer distances than before, was also developed by the laboratories. Known as the close-spaced-triode (grid and cathode separated by only one-fifth the diameter of a hair) the new tube formed the heart of the improved relay equipment being installed in the New York-Chicago-Omaha radio relay system. The new equipment permitted simultaneous relaying of six television programs or thousands of telephone conversations through a single relay antenna.

Another transmission development was a new voice frequency repeater. Used extensively in telephone plant, repeaters were located at regular intervals on long distance circuits to amplify the voice signals progressing along the route. The new repeater, employing war-developed miniature techniques, was not much larger than the vacuum tube alone of its predecessor, and was less costly to make, occupied less space in repeater buildings and simplified maintenance.

In Nov. 1949, Boston, Mass., became the sixth major toll dialing centre in the Bell system's plan for nationwide dialing of long distance calls by operators. The other five, in order of installation, were Philadelphia, Pa. (1943), New York, N.Y., and Chicago, Ill. (1948), Cleveland, O., and Oakland, Calif. (1949). These interconnected networks, together with other smaller systems, by the end of the year enabled operators to dial straight through to distant telephones in about 600 cities and towns. Nearly 30% of the nation's long distance calls were being handled by this method.

Construction of the coaxial cable and radio relay network for telephone and television transmission continued to move forward in 1949. By year-end, the Bell system television network mileage had grown to about 8,500 channel miles, as compared with about 3,500 mi. at the end of 1948. The number of major cities connected to the network had risen from 14 to 25. Substantial progress was also made on construction of the Bell system's New York-Chicago-Omaha microwave radio relay system, to be used for telephone as well as television transmission.

Mobile telephone service by the end of 1949 was available in about 150 areas, with the Bell companies serving more than 7,500 vehicles and other mobile units and handling about 230,000 calls a month.

Overseas telephone service also continued to expand. Foreign points to which service was extended during 1949 included Hong Kong, Capetown, Tangier, Malta, Iran and the Bahrein Islands in the Persian gulf. By year-end, calls were being made at the rate of more than 620,000 a year, and 95% of the world's telephones, in more than 85 countries and territories, could be reached from any telephone in the United States. (L. A. Wi.)

Telescopes: *see* Astronomy.

Television.

United States.—Late in 1948, the Federal Communications commission (*q.v.*) instituted a "freeze" on applications for television stations in order to investigate the cochannel and adjacent channel interference problems and, if necessary, revise geographical allocations before further stations were actually placed in operation. It had been expected that the engineering studies involved could be made and the hearings completed so that the freeze could be lifted early in 1949; but the engineering work was not finished until the middle of the year and, in the meantime, other delaying factors arose. The inadequacy of the very-high-frequency channels to provide a nation-wide competitive television system became apparent, and consideration was given to the allocation of ultra-high-frequency channels to provide for additional stations. Certain proponents of colour television insisted that it had now been developed to the point where a satisfactory commercial television broadcasting service could be provided. Late in September a general television hearing was begun to consider the following important issues:

1. Consideration of colour television systems which would permit operation in a 6-mc. television channel and which would require no more than relatively minor modifications of existing receivers.
2. Reallocation of the 12 VHF television channels to reduce interference between stations.
3. Utilization of the band 475-890 mc. for television broadcasting service and the geographical allocation of channels within that band. (Included in this issue was the question of the allocation of the 470-500 mc. band for broad-band multichannel mobile radiotelephony.)
4. Allocation of specific channels to cities and communities on a nation-wide basis.

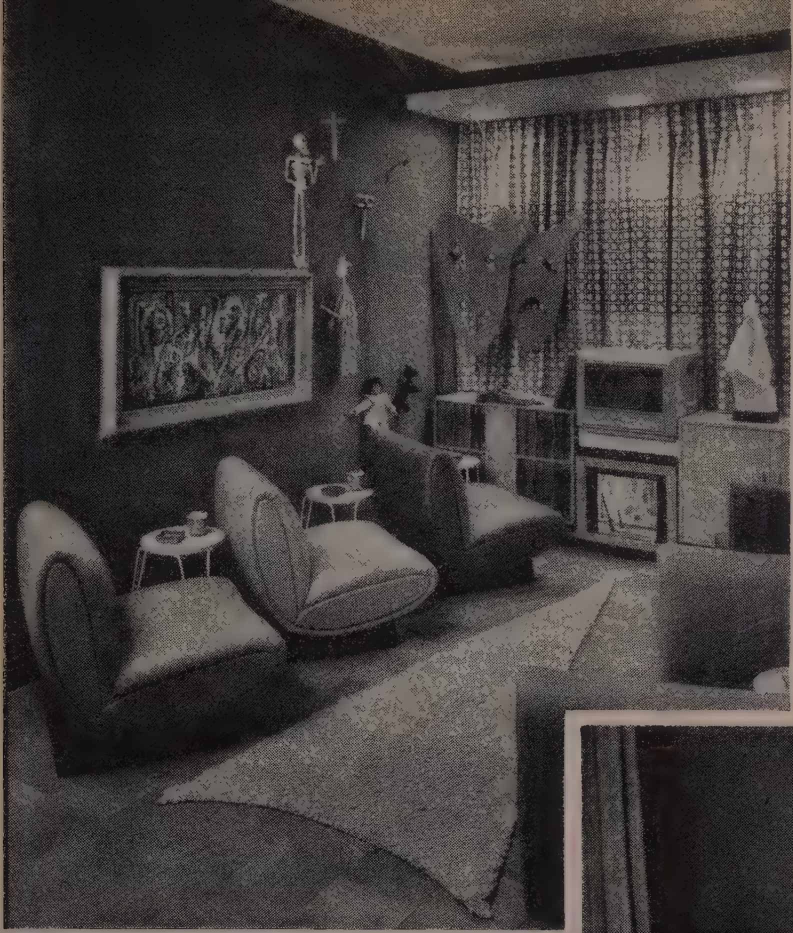
After the first few weeks of the hearing it became apparent that the colour television issue could not be settled quickly, and it appeared that the commission would not reach the general allocations phase of the hearing until 1950.

Colour Television.—Three specific colour television systems were proposed during the course of the hearing; a "field sequential" system in which the picture is scanned from top to bottom before a change from one primary colour to another occurs; a "line sequential" system which requires a change in colour for each scanning line; and a "dot sequential" system in which the colour is changed for each picture element or dot.

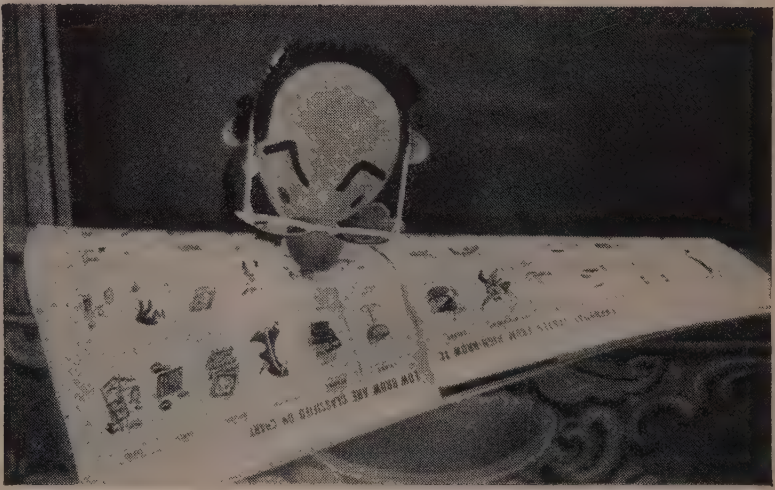
CBS sponsored its "field sequential" system with standards modified to permit operation in a 6-mc. band; the basic system, employing a colour filter disk, was the same as the one which the commission had declined to adopt in 1947. A new "dot sequential" system was proposed by RCA. Complete compatibility was claimed for this system in that it would permit black and white receivers to obtain black and white pictures from colour transmissions without receiver modification; and with high definition, permitting detail equivalent to monochrome to be transmitted in colour. The "line sequential" system was advocated by Color Television, Inc., of San Francisco, Calif. This system was also completely compatible in that black and white receivers would not have to be modified, and transmission of picture detail would be comparable to that provided by the black and white standards.

Television Receivers.—Television receiver production for 1949 was estimated at more than 2,500,000 units, a three-fold increase over 1948. The total value of these receivers was more than $700,000,000, based on an average sales price of $280. A total of 3,500,000 television picture tubes or kinescopes were produced.

Two definite trends in television receivers developed in 1949; larger pictures and lower prices. The percentage of receivers employing the 12½-in. and larger picture tubes was increasing at a rapid rate. Some manufacturers had already discontinued using 10-in. tubes. Plastic and metal television receiver cabinets were introduced in order to obtain lower instrument costs. During 1949 the price of a 10-in. television receiver was approximately one-half that of a comparable receiver produced in 1946.

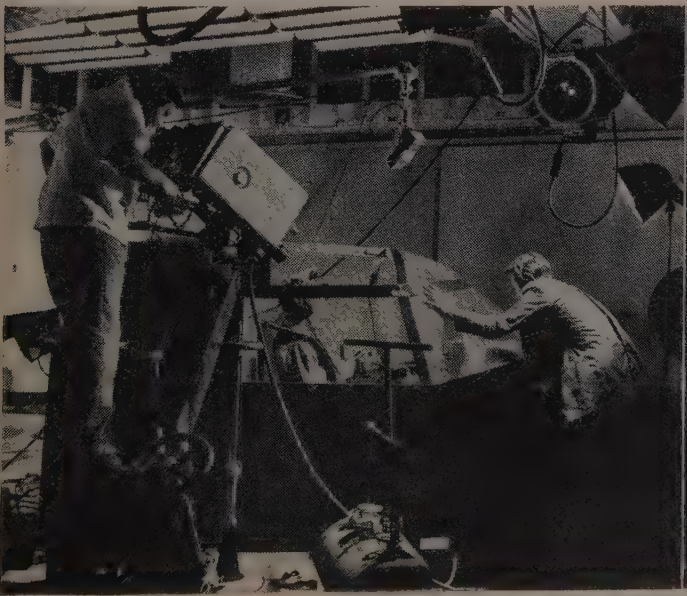


Left: TELEVISION ROOM, featuring interior arrangements and furnishings to fit the needs of the growing new medium of entertainment in U.S. homes, as displayed in a New York city department store in 1949

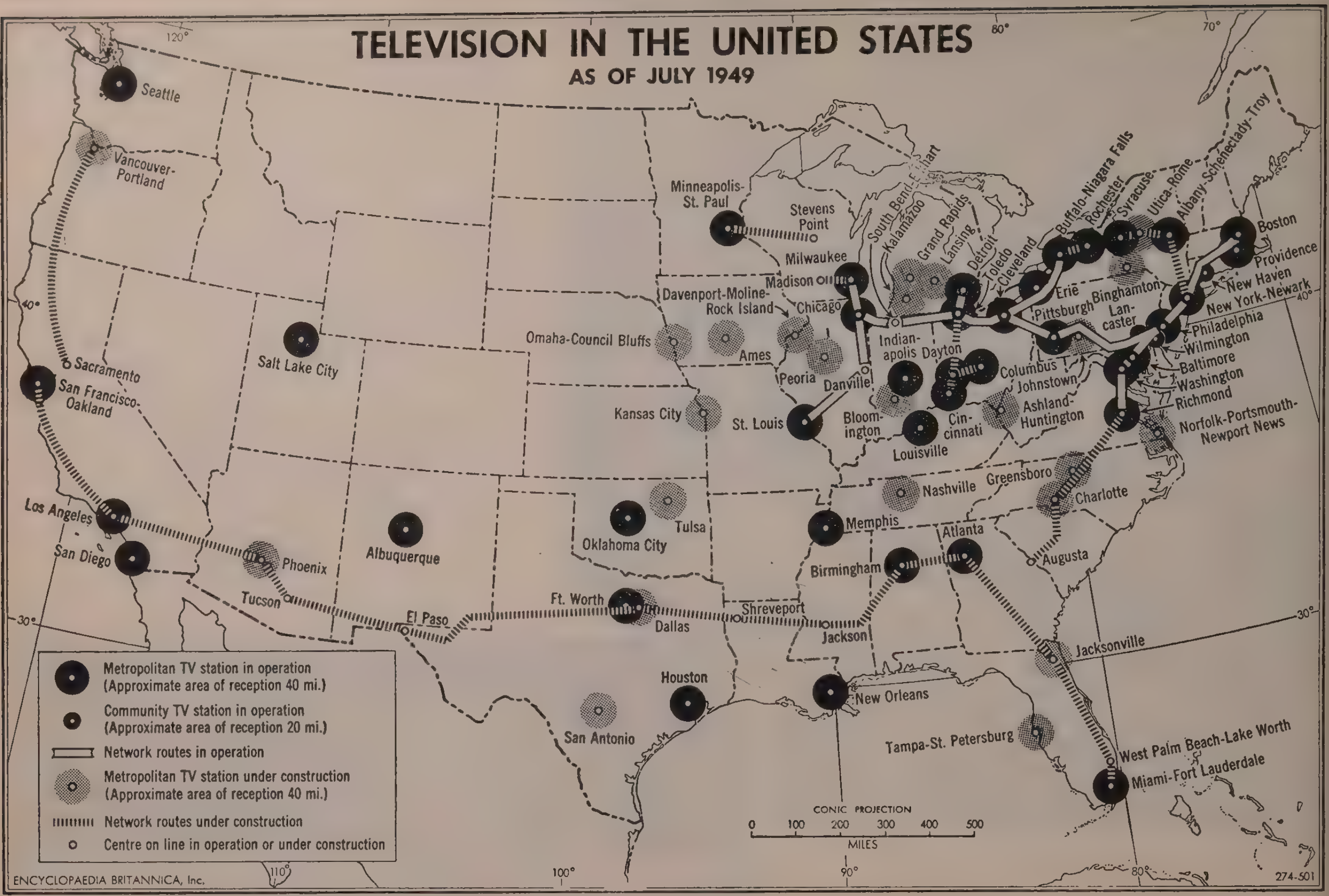


Right: KUKLA, star attraction of the TV puppet show, "Kukla, Fran and Ollie," shown studying the "High-Brow-Low-Brow" chart which appeared in a 1949 issue of *Life*

Below: U.S. NAVY "PILOT" in a mock-up bomber televising instructions on how to operate a simplified control system in 1949, as the navy experimented with mass training of personnel by means of TV, with telecasts transmitted to remote points by microwave or coaxial cable relays



Below: ON STAGE during the filming of a motion picture on housing produced by the television-film unit of the Municipal Broadcasting system. The unit was set up in New York city in 1949 to make documentaries for release to television stations, schools and museums



TELEVISION IN THE UNITED STATES
AS OF JULY 1949

A number of television receiver manufacturers featured models with built-in antennas; others placed special emphasis on picture tubes having light absorbing material incorporated in the glass on which the fluorescent screen material was deposited. Improved picture contrast and greater freedom from undesired effects of room lighting were claimed for these tubes.

Networks.—At the end of 1949 more than 8,000 mi. of network facilities were in use interconnecting more than 50 television stations. In January the east coast and midwest television networks were interconnected by an east-west link through Pittsburgh, Pa. Additional network extensions were provided to Columbus, Cincinnati and Dayton in the Ohio valley; to Erie and Lancaster, Pa.; to Schenectady, Utica, Syracuse and Rochester in New York state; and to Providence and Wilmington on the east coast.

To provide a program service to stations not yet served by interconnecting network facilities, program originating stations relied upon films made by photographing programs as they were reproduced on the face of special kinescopes or picture tubes. These kinescope recordings were processed rapidly and sent to affiliated stations by the fastest means available.

Stations and Programs.—At the end of the year, 98 television stations were operating on a regular program basis, double the number on the air on Dec. 31, 1948.

During 1949 elaborate variety shows continued to hold first place in program preference, with the weekly program the "Texaco Star Theatre" starring Milton Berle sometimes accounting for as much as 75% of the total viewers. Outstanding sports events such as the world series baseball games, championship prizefights and the more important college football games were some of the feature television programs of the year.

The Truman presidential inaugural ceremonies televised on Jan. 20 were witnessed by more than 10,000,000 people, a total greater than the sum of all who saw presidential inaugurations from Washington to Roosevelt.

The advisability of continuing to televise professional sports events was being questioned by many sports promoters at the end of the year. The owners of professional football teams had banned the broadcasting of their games in the particular cities where they were being played, because they feared the telecasts would adversely affect the box office. This problem was also under consideration in intercollegiate circles.

Theatre Television.—Increased interest in theatre television was evident in 1949. Direct projection theatre television equipment was installed in theatres in Brooklyn and Boston. Experimental equipment was used to show the 1949 baseball world series to paying audiences in both theatres. (*See* also MOTION PICTURES.)

Television in Education.—During 1949 surgical operations were televised in colour for several medical conventions. Medical authorities who participated in these demonstrations were enthusiastic about the potentialities of colour television for teaching surgery and medical techniques. In New York city, 4,000 high school students witnessed a morning session of the United Nations.

(*See* also ADVERTISING.) (G. L. Bs.)

Europe.—During 1949 progress outside the U.S. and Great Britain was still primarily a matter of blueprints and optimistic statements intended to allay local impatience. Even in France the number of sets in operation at the end of the year was about one-tenth of the licences issued in Great Britain—20,000 to 200,000. No statistics of this kind were available for the U.S.S.R., the only other country in the world to operate a genuine public service; but it was learned that of the two standard models of receiving sets, one made in Moscow, the other in Leningrad, neither was sold except by special licence. The Moscow Television centre in the middle of the year was transmitting four programs a week, made up of newsreels, children's hour, plays and opera relayed from the state theatres, films and light concerts. Audiences were encouraged to listen in groups, in clubs and rest centres. Moscow operated on a standard of 625 lines and this showed signs of becoming a world standard, on paper at least, because at a conference of European radio organizations in Switzerland in the autumn, Belgium, Czechoslovakia, Denmark, Germany, Italy, the Netherlands and Switzerland all agreed that it was likely to serve their needs best. Australia and Argentina also settled on 625 lines. Adoption, however, was so far entirely theoretical; only four countries in the European group even embarked on closed circuit experiments and these for the most part consisted of geometrical patterns, not genuine programs. The European practitioners, Great Britain and France, on the other hand, agreed on a common temporary standard of 405 lines (which for France meant a slight reduction), and agreed to consider future co-operation at a higher level of scanning. The way was thus paved for a full exchange of programs when a cable or radio link was established between the two countries. This was only realistic after it became increasingly obvious that television was a highly expensive entertainment. By the end of 1949, for instance, Great Britain was spending more than £1,000,000 a year on less than 250,000 viewers. This inescapable financial fact made it unlikely that any other European country would start a public service for at least two years. To many observers it seemed unfortunate that the smaller countries were not prepared to align themselves with Great Britain and France, since by so doing they would not only have made television a practical proposition for themselves, but would have advanced the cause of European unity.

At the end of the year the B.B.C. opened at Sutton Coldfield, Warwickshire, the most powerful transmitting station in the world, with an aerial 750 ft. high, designed to serve the midlands but from its first tests it seemed likely to serve also much of the north. Before this, however, the B.B.C. had announced a national plan for bringing television to 80% of the population within five years. This involved the building of three more high-powered stations, in the north of England, in Scotland, and in the Bristol channel area, and five low-powered stations, working on the same frequency, for the northeast of England, the Highlands of Scotland, Northern Ireland and the west of England (2). Completion of the plan depended on the government's giving permission for the necessary capital expenditure, estimated at £10,000,000. The acquisition by the B.B.C. of the film studios at Shepherds Bush, London, from the J. Arthur Rank organization gave the hard-pressed program and technical staff at Alexandra palace hope of better and roomier conditions in 1950. New cameras were installed and a new system of recording direct from the screen was developed by B.B.C. engineers.

Tellurium: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Temperance League of America: *see* SOCIETIES AND ASSOCIATIONS.

Tennessee.

A south central state, 16th to enter the union, Tennessee is called the "Volunteer state." Land area 41,961 sq.mi., water area 285 sq.mi. Population (1940): 2,915,841; rural 1,888,635, urban 1,027,206, rural farm 1,271,944, native white 2,395,586, Negro 508,736, foreign born 11,320, other races 199.

The U.S. bureau of the census estimated the state population in 1949 to be 3,234,000.

The state division of vital statistics estimated population of principal cities to be (1947): Nashville (capital), 177,216; Memphis, 321,796; Chattanooga, 134,228; and Knoxville, 115,769.

History.—The state commissioners in 1949, appointed by Gov. Gordon Browning, were: agriculture, Edward Jones; conservation, C. P. Swan; education, J. M. Smith; finance and taxation, Clarence Evans; highways and public works, E. W. Eggleston; institutions, Houston Brown; public welfare, J. O. McMahan; insurance and banking, M. O. Allen; labour, J. L. Case; public health, R. H. Hutcheson; safety, Sam Neal; employment security, E. K. Wiley. Railroad and public utility commissioners elected by the people were: Hammond Fowler, John Hammer and J. B. Avery. The constitutional officers were: James H. Cummings, secretary of state; W. N. Estes, state treasurer; Cedric Hunt, state comptroller.

The general assembly of 1949 provided for an election on the question of calling a limited constitutional convention. The voters rejected this proposal. The state legislature in 1949 abolished the payment of poll tax as a prerequisite to voting in primary elections for all state and national offices; and exempted women, veterans and the blind from the poll tax requirement for all elections. It was left to the option of the county executive committee of each party, each year, to decide whether poll tax receipts should be required of other males (between the ages of 21 and 50) for voting in their respective primary elections for county and city offices. The compact for regional education was approved. A state bond issue of $3,000,000 was authorized to assist in the erection of a University of Tennessee memorial research centre and hospital in the Knoxville area. A motor vehicle financial responsibility law was enacted.

Education.—Enrolment in elementary schools in 1948 was 518,910, an increase of 3.6% over 1947. High school enrolment was 109,520, a drop of 9.7%. Total net enrolment in 4,994 schools was 628,439. There were 4,637 county and 357 city schools, 3,994 white and 1,000 Negro. The total number of teachers was 21,968.

Social Insurance and Assistance, Public Welfare and Related Programs.—In Sept. 1949 the total amount of assistance was $2,982,706 to 72,290 cases; 62,253 old-age recipients received 64.2%, 54,634 dependent children 32.9% and 2,381 blind 2.9%. The increase in payments over Sept. 1948 was 31.1%.

In 1948–49 there were seven correctional institutions; expenditures were $1,791,514. Separate schools were maintained for the blind and the deaf, three state hospitals for the insane, a home for the feebleminded and an industrial school.

Communications.—Of the 67,388 mi. of public road in 1948, 7,563 mi. were state highways; expenditure for construction of state highways was $31,596,210. There were 3,491 mi. of railroad in Tennessee in 1948. As of June 1949 there were 70 civilian airports, of which 39 were commercial, 22 municipal, 5 CAA intermediate, and 4 private, and 2 seaplane bases. There were 558,600 telephones in Tennessee, 155,500 business and 403,100 residence. Water-borne commerce on the Tennessee river in 1948 amounted to 2,963,264 net tons; Cumberland river 1,351,956; Mississippi river 11,217,750 (1946); and 2,054,126 (1946) at Memphis.

Banking and Finance.—In June 1949 there were 72 national banks and 220 state banks; assets $1,376,914,000 for national and $566,369,705 for state banks; deposits $1.287,522,000 for national banks and $523,774,044 for state banks. Savings and loan associations numbered 38 with assets of $114,334,000. Federal associations constituted 35 of these with assets of $113.648,000.

State revenue collected for the fiscal year 1948–49 was $141,091,086. Federal aid amounted to $41,642,096, proceeds from bonds sold $24,900.000. Debt outstanding was $91,933,000, an increase of $14,000,000 during the year. Collections increased by $9.259.239 over 1948, expenditures by $23,339,401. Of total expenditures of $203,431,622, $44,200,000 was for education, highways $41,100,000, welfare $30,800.000 and distribution to cities and local governments $63,100,000 ($25,900,000 for education).

Agriculture.—There were 234,431 farms in 1945; 17,788,997 ac. in farms, and 5.843,567 ac. in harvested crops.

The gross value of agricultural production in 1948 was $653,778; cash farm income $508.468. Cash income from crops was $260,049,000; from livestock $242,806.000; government payments $5,613,000. The value of home consumption was $145,310,000. The forest area was 12,641,000 ac.

Manufacturing.—According to the 1947 census of manufacturing, 3.346 manufacturing plants employed 221,454 persons, wages and salaries being

Table I.—*Leading Agricultural Products of Tennessee*

Crop	1949	1948	Average, 1938-47
Corn, bu.	68,900,000	74,415,000	63,487,000
Tame hay, tons	2,464,000	2,029,000	2,209,000
Cotton, bales	650,000	669,000	523,000
Soybeans, bu.	1,140,000	1,340,000	525,000
Wheat, bu.	4,350,000	5,365,000	4,727,000
Oats, bu.	6,350,000	6,048,000	4,069,000
Tobacco, lb.	148,512,000	148,275,000	119,098,000
Potatoes, bu.	2,250,000	2,322,000	3,273,000
Sweet potatoes, bu.	2,205,000	2,000,000	3,565,000

Table II.—*Principal Mineral Products of Tennessee*

Mineral	Value 1946	Value 1945
Coal ($24,710,000 est. 1948)	$23,565,000	$21,478,639
Stone*	7,625,086	6,318,915
Cement	9,386,582	4,669,330
Zinc	6,005,816	7,779,520
Sand and gravel	3,632,603	2,578,379
Lime	1,232,480	1,373,268
Clay products (heavy)	3,691,000	1,988,736
Raw clay	1,955,408	1,196,498
Barite	272,169	256,756
Phosphate rock	7,014,490	6,062,688
Miscellaneous	5,670,366	4,973,271
Total value	$70,051,000	$58,676,000

*Largely limestone and marble.

$473,211,000. Value added by manufacture was $957,539,000, led by chemical industries $162,578,000; food $132,489,000; and textiles $121,294,000.

Mineral Production.—The total value of mineral production in Tennessee for the year 1947 was $84,425,000, according to the U.S. bureau of mines. (C. E. A.)

Tennessee Valley Authority.

Traffic on the 630-mi. inland navigation channel provided by the TVA multiple-purpose system of dams continued to increase in 1949. An estimated 413,162,893 ton-mi. of freight was carried during the first 11 months of the year, 10% more than in the same period of the preceding year. The greatest increase was in iron and steel shipped to fabricators in the valley region, and gains were registered also in shipments of grain, automobiles and petroleum products. These gains more than made up for a decline in coal traffic, resulting from lessened need for operation of steam-electric plants because of good water conditions. Traffic on the river in all of 1948 was 427,850,000 ton-mi., 13 times as much as in 1933 when TVA was established.

While no major floods occurred, savings in damage were achieved both in the Tennessee valley and the lower Ohio basin by regulation of lesser floods. The integrated power system (including several hydro projects owned by the Aluminum Company of America) produced 15,750,000,000 kw.hr. in the fiscal year ended June 30, 1949. During 1949, the 145 municipal and co-operative systems which distribute TVA power passed the 1,000,000 mark in number of customers served. TVA's wholesale power revenues were $58,000,000 in the fiscal year, providing net operating revenues of $21,500,000, equal to a 5% return on the net average power investment. Revenues of the locally-owned distributing systems totalled nearly $71,000,000, and their combined net earnings totalled nearly $14,000,000. Average use per residential customer increased to 2,762 kw.hr. at 1.54 cents per kw.hr., compared with national averages of 1,625 kw.hr. and 2.98 cents per kw.hr. Rural service expanded rapidly; of 120,000 new customers connected during the fiscal year, 92,000 were rural, and of these about 75,000 were farms. At June 30, 1949, about 66% of farms in the TVA service area had electricity, compared with 3% in 1933.

Two reports by outside agencies answered claims that TVA power operations are subsidized. The Federal Power commission, in a report prepared with the assistance of the U.S. army engineers and at the request of a congressional committee, found that the principles used in TVA's allocation of multiple-purpose investment among flood control, navigation and power were "reasonable" and that the allocation itself was "reasonable." The conclusions were based on findings that estimated benefits of navigation and flood control would justify single-purpose investments for those purposes far exceeding the actual investments in the multiple-purpose system. Haskins and Sells, certified public accountants of New York city, in a "task force" report to the Hoover Commission on Organization of the Executive Branch of the Government, found that "the Authority (TVA) is presently earning more than sufficient revenues from power operations to repay the investment in power facilities with interest."

TVA commenced construction of the Johnsonville steam plant on the shores of Kentucky lake in west Tennessee. The plant would have a rated capacity of 337,500 kw. and would be integrated in operation with TVA's hydro and steam system which at June 30, 1949, had an installed capacity of 2,747,100 kw. Watauga dam, on the Watauga river in east Tennessee, was placed in operation, the 17th dam to be completed by TVA since 1933. The dam, an earth and rock fill structure, is 318 ft. high and 900 ft. long, providing useful storage of 627,000 ac.-ft. and having an installed generating capacity of 50,000 kw.

Nearly 400 persons visited TVA chemical plants for technical information concerning fertilizer research or related subjects in the fiscal year, while other firms and individuals obtained information by correspondence or published sources. A continuous vacuum crystallization process for producing ammonium nitrate was placed in operation, essentially eliminating the explosion hazard present in the two common methods of graining the material, which is useful both as a fertilizer and munitions ingredient. TVA produced 158,700 tons of concentrated superphosphate, 3,500 tons of calcium metaphosphate, 15,000 tons of fused tricalcium phosphate and 151,200 tons of ammonium nitrate fertilizer. About 7,500 test-demonstration farmers used TVA fertilizer materials during the year, and reports from state extension services continued to show the value of the materials in soil and water conserving types of agriculture. Reforestation progressed to the point where the 200,000,000th tree from TVA nurseries was planted on the grounds of Murray State Teachers college, Murray, Ky. Most of the planting had been done on private lands by the owners. About 290 forest management demonstrations, large and small, had been established.

Harry A. Curtis was confirmed by the senate Feb. 8 as member of the TVA board of directors to succeed H. A. Morgan, retired. Other directors were Gordon R. Clapp, chairman of the board, and James P. Pope. (*See* also DAMS; ELECTRICAL INDUSTRIES; PUBLIC UTILITIES.)

FILMS OF 1949.—*Kentucky Dam* (Tennessee Valley Authority). (K. R. K.)

Tennis.

The tennis spotlight in 1949 was focused on two outstanding players from California, Richard A. (Pancho) Gonzales of Los Angeles and Frederick R. (Ted) Schroeder, Jr., of La Crescenta. After Schroeder won the English title at Wimbledon in July, Gonzales defeated him three sets to two in the deciding round of the U.S. championship at Forest Hills, L.I., N.Y., on Labor day. This was Gonzales' second successive win of the U.S. singles crown. He later left the amateur ranks when he signed a contract to meet professional champion Jack Kramer in a series of indoor exhibition matches.

In the field for the U.S. championship were the leading players of the world, including Eric Sturgess, champion of South Africa and runner-up for the U.S. title in 1948; Jaroslav Drobny, former Czechoslovakian Davis cup star; Frank Sedgman, champion of Australia, and his teammates, John E. Bromwich and George Worthington; Giovanni Cucelli, Italy's Davis cup hero and his partner, Marcello del Bello; Felicisimo Ampon, champion of the Philippines; Robert Abdessalam of France; Naresh Kumar of India; and Ricardo Balbiers of Chile. The other leading U.S. players included the veterans William F. Talbert, Gardnar Mulloy, Frank A. Parker and the younger clan Arthur Larsen, Earl Cochell, Herbert Flam, E. Victor Seixas, Samuel Match, James Brink and Tony Trabert. During the championship at Forest Hills, Schroeder was awarded the William M. Johnston trophy for good sportsmanship.

Gonzales also won the U.S. clay court and U.S. indoor championships.

Parker, U.S. champion in 1944 and 1945, also played his last year as an amateur after having been ranked in the first ten for 17 yr. Parker won his second French title in Paris early in the season, a feat accomplished for the first time since that championship was opened to foreign players in 1925.

Schroeder's Wimbledon victory was scored on his first try for that English title. He overpowered his countryman Mulloy (whom he met in the first round), Sedgman, Sturgess and Drobny all in hard-fought five-set encounters. Gonzales and Parker captured the English doubles championship, defeating Schroeder and Mulloy in a straight-set final.

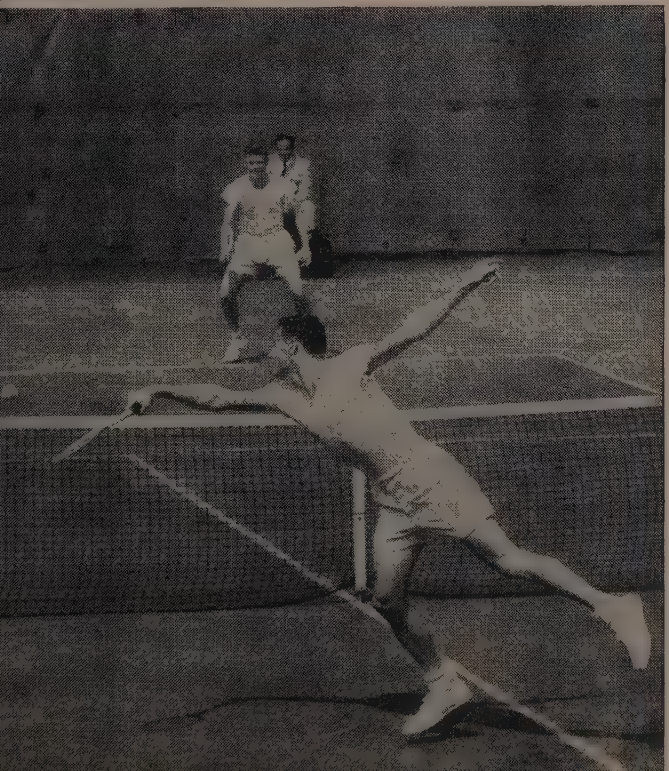
The U.S. was challenged by 28 nations for the Davis cup. Italy won the European zone competition and for the first time in history an Italian Davis cup team competed in the U.S. in an interzone final. Cucelli and Del Bello, however, unaccustomed to grass courts, were unequal to the task of holding off the experienced Australians, American zone winners, on the turf courts of the Westchester Country Club, Rye, N.Y., in August. Later that month in the challenge round at Forest Hills stadium, N.Y., the U.S. team turned back the Australians 4–1. It was the third successive victory for the U.S. since they won the cup from Australia in 1946. In the singles Gonzales and Schroeder each defeated Billy Sidwell and Sedgman while Bromwich and Sidwell downed Talbert and Mulloy in the doubles. This Australian pair also captured the U.S. doubles championship at the Longwood Cricket club, Brookline, Mass., where they beat their teammates, Sedgman and Worthington.

Women's tennis in 1949 again found U.S. players dominating the international picture. Mrs. Margaret Osborne du Pont won the French singles title and the doubles with A. Louise Brough. These two fought it out at Wimbledon, where Miss Brough won her second successive English singles championship, downing Mrs. du Pont, 10–8, 1–6, 10–8.

Doris Hart of Jacksonville, Fla., visited Australia and captured the Australian women's title. In the U.S. championship at Forest Hills, N.Y., she eliminated Miss Brough to reach the final, where she lost to Mrs. du Pont. For the eighth year in succession Mrs. du Pont and Miss Brough won the U.S. women's doubles championship.

England again was unsuccessful when it challenged the U.S. for the Wightman cup. The matches were played in the U.S. and the victory was the 17th for the U.S. women. (E. S. Br.)

TED SCHROEDER (foreground) of the U.S. and Frank Sedgman of Australia, during the third challenge round of the Davis cup finals at Forest Hills, N.Y., in Aug. 1949. Schroeder's victory was the third for the U.S. and gave it possession of the Davis cup



Texas. A west south central state of the United States, Texas was admitted to the union as the 28th state on Dec. 29, 1845. It is known as the Lone Star state from the single star in the flag of the Texas republic, 1836–45. Land area 263,644 sq.mi.; inland water 3,695 sq.mi.; total 267,339. Population (1940) 6,414,824. Estimated by U.S. bureau of the census, July 1, 1949, 7,532,000. Characteristics (1940): Urban, 2,911,389; rural, 3,503,435; white, 5,487,545; Negro, 924,391; other, 2,888; native, 6,179,296; foreign-born, 235,528. Capital: Austin, with 87,930 population in 1940 (121,000 estimated in 1949). Other cities: Houston, 384,514 in 1940 (500,000); Dallas, 294,734 (390,000); San Antonio, 253,854 (385,000); Fort Worth, 177,662 (268,000); El Paso, 96,810 (115,000); Galveston, 60,862 (75,000); Beaumont, 59,061 (81,000); Corpus Christi, 57,301 (120,000); Waco, 55,982 (78,000).

ALLAN SHIVERS, Democrat, who became acting governor of Texas on July 16, 1949, following the death of Gov. Beauford Jester

History.—The 51st legislature, Jan. 11 to July 6, 1949, the longest session on record, resulted in the passage of several hundred general statutes, important among which were reorganization of the state public school system, reform of state prison system, greatly increased support for the state hospital system and creation of 15 new state boards and commissions, including a state budget board and a state legislative council. Ten constitutional amendments were submitted. All were defeated except two, providing for rural fire prevention districts and changing district court procedure, in an election Nov. 8. Chief interest centred in a proposal for annual legislative sessions, instead of biennial, and to raise salaries. A similar proposal was defeated in 1947. The only other election, also on Nov. 8, was that to name members to the new state board of education.

The principal state officials for the biennium, 1949–1950, were: governor, Allan Shivers (succeeded Gov. Beauford H. Jester who died in office July 11, 1949); lieutenant governor (vacancy as of Jan. 1, 1950, Shivers being elevated to the governorship upon Jester's death); attorney-general, Price Daniel; comptroller of public accounts, Robert S. Calvert; treasurer, Jesse James; state commissioner of education (vacancy as of Jan. 1, 1950, pending appointment to newly created office); commissioner of agriculture, J. E. McDonald; commissioner of the general land office, Bascom Giles.

Education.—The state's public school system was reconstructed in 1949 by passage of the Gilmer-Aikin act, principal effect of which was to transfer administration of schools from local to state authorities. The former nine-member board of education appointed by the governor was abolished, also the elective state superintendent of public instruction. The new act set up a 21-member state board of education with 1 member elected from each congressional district. Succeeding the state superintendent was the state commissioner of education appointive by the new elective board.

Scholastic population (1949) 1,529,972; administrative and teaching personnel, 48,987; state expenditures for education, $165,864,240, including higher education; local support of common schools only, $72,-

000,000.

Social Insurance and Assistance, Public Welfare and Related Programs.—(As of Aug. 31, 1948) Old-age assistance rolls, 205,526 with average $31.51 monthly payments. Aid-to-dependent-children rolls, 42,518 children in 15,951 families, with average of $15.62 a child or $41.65 a family. Aid-to-blind rolls, 5,709 with average of $34.94. Total recipients of public assistance, 227,186.

Communications.—Total public road mileage in 1949 was 204,000; designated highway system, 30,146 mi., of which 29,003 were hard-surfaced; annual disbursements for highways in late years, $107,000,000, including federal aid; total motor vehicle registration, 2,425,476. Main-line railway mileage, 15,585; tons freight revenue, 163,222,751. Water commerce: foreign, 15,815,978 tons; ocean-going coastwise and intra-coastal canal, 107,720,214. The state is served by 11 interstate and international air lines. The number of airports on Jan. 1, 1949, was 624. Telephone exchanges 1,034, 1,511,602 instruments; telegraph offices, 1,828; radio stations: AM 171, FM 33, TV 6.

Banking and Finance.—National banks, June 30, 1949, 438; deposits, $4,765,149,395; resources, $5,093,512,827. State banks, 443; deposits, $1,051,879,475; resources, $1,128,643,567. Federal savings and loan associations, 84, with $294,518,385 of assets (June 30, 1949); state savings, and building and loan associations, 57, with $131,994,712 assets. State government receipts for fiscal year ended Aug. 31, 1949, $522,421,226; expenditures, $449,189,762. The large surplus was dissipated by appropriations for the 1949–50 fiscal year. The state government's bonded debt was $4,107,000, all of which was owned by the state's various permanent funds; total debt of all counties, cities, districts and other local subdivisions, $647,251,632.

Agriculture.—Total 1949 harvested acreage, 30,141,000; value of crops, $1,522,043,000. Notable was the cotton crop of 5,900,000 bales from 10,725,000 ac., second largest in the history of the state, representing a sharp upturn after several years of declining cotton production. Cash income from crops and livestock, 1949, was estimated at $2,300,000,000.

Table I.—*Leading Agricultural Products of Texas*

Crop	1949	1948	Average 1938–47
Cotton lint, bales	5,900,000	3,153,000	2,722,000
Cottonseed, tons	2,432,000	1,306,000	1,120,000
Wheat, bu.	102,848,000	59,104,000	53,944,000
Sorghum for grain, bu.	92,676,000	76,434,000	58,596,000
Corn, bu.	58,208,000	44,698,000	67,694,000
Rice, bu.	22,618,000	24,459,000	16,416,000
Sorghum for forage, tons	2,145,000	2,750,000	3,970,000
Peanuts, lb.	343,785,000	300,800,000	265,706,000
Hay, tons	1,366,000	1,311,000	1,423,000
Oats, bu.	34,020,000	14,240,000	27,370,000
Tomatoes, bu.	5,517,000	4,885,000	...
Sweet potatoes, bu.	5,775,000	3,250,000	5,229,000
Grapefruit, boxes	5,400,000	11,300,000	18,624,000
Onions, 50-lb. sacks	3,644,000	4,747,000	...
Oranges, boxes	1,550,000	3,400,000	3,618,000

Number and value of livestock on farms, Jan. 1, 1949 (U.S. department of agriculture): All cattle 8,235,000, valued at $848,205,000; milk cows only 1,283,000, valued at $173,205,000; hogs 1,701,000, valued at $46,437,000; sheep 6,628,000, valued at $85,393,000; goats 2,471,000, valued at $11,614,000; horses 387,000, valued at $15,480,000; mules 160,000, valued at $8,320,000; chickens 25,771,000, valued at $32,471,000; turkeys 770,000, valued at $5,544,000.

Manufacturing.—The 1947 census of Texas manufactures showed $1,727,464,000 of total value added to manufactured products as compared with $453,105,423 in the next preceding census of 1939. Wage earners had increased from 126,996 to 242,014; wages from $128,138,703 to $558,420,000.

Minerals.—Total production value in 1949 was $2,266,000,000 (preliminary estimate) as compared with $2,672,000,000 in 1948. The decline came primarily from official restrictions on petroleum production in 1949. Crude oil production, 1949, estimated at 738,475,000 bbl., valued at $1,956,959,000, as compared with 1948 production and value of 898,313,027 bbl. and $2,362,563,261. Natural gas production, 1949, estimated at 3,517,567,000,000 cu.ft., valued at $140,000,000, as compared with 1948 production and value of 3,298,483,000,000 cu.ft. and $128,540,830. (These estimates from Mid-Continent Oil and Gas association, Dallas). (S. McG.)

Table II.—*Principal Mineral Products of Texas*

Mineral	Production 1947	Production 1946	Value, 1947
Oil, bbl.	819,427,000	760,505,000	$1,577,028,000
Natural gasoline, thousand gal.	1,646,227	1,581,451	104,007,000
Natural gas, million cu. ft.	1,932,857	1,776,148	71,129,000
Sulphur, long tons	3,965,825	3,188,086	70,514,000
Carbon black, lb.	895,773,003	830,850,000	51,787,000
Liquefied petroleum gases, gal.	973,703,000	691,357,000	33,133,000
Cement, portland, bbl.	12,349,219	10,996,478	24,112,000
Sand and gravel, commercial tons	11,641,867	11,188,849	10,249,000

Textile Industry.

The United States textile industry experienced in 1949 its first decline in demand for its products during the postwar period. Consumption of the three major fibres, cotton, wool and synthetics, dropped by approximately 20% in 1949 as against 1948, and by about the same percentage in comparison with the average of the three previous years, 1946, 1947 and 1948.

This decline was not uniform among those three classes of fibres. Wool consumption in the United States suffered the greatest drop, about 30%; cotton was next with a decline of approximately 17%; and even the group of rayon and other synthetic fibres, which had experienced a steady march upward over the years, was consumed at a rate of about 13% less in 1949 than in 1948.

The over-all decline in demand for textile products in 1949 can be explained to some extent by the general recession in business activity in the country as a whole, particularly during the first part of the year. Another factor affecting textiles was the appearance on the market, in larger quantities, of other types of consumer goods which had been practically unavailable during World War II and scarce during the immediate postwar years.

As demand declined, prices dropped also, although not in proportion. Wholesale prices of textiles in the United States in 1949 were approximately 6% lower than they were in 1948. However, 1947 and 1948 were high-price years in textiles, reflecting the dropping of controls. Consequently, 1949 was still slightly above the average of the three previous years, 1946, 1947 and 1948, and some textile manufacturers anticipated further price declines.

The United States decline in both output and prices of textiles was regarded as not only a domestic situation but a part of what some experts in the international field regarded as an approaching crisis in world textiles. Currency restrictions and other problems of world trade added to the uncertainty created by the increased consumer resistance in the domestic market. (D. G. Wo.)

Great Britain.—Board of trade returns showed that in the first nine months of 1949, imports of raw wool into the United Kingdom totalled 623,000,000 lb., compared with 529,000,000 lb. for the same period in 1948. Re-exports amounted to about 103,000,000 lb., which was slightly lower than in 1948. In the same period of 1949 (Jan. to Sept.), exports of wool tops were 44,807,000 lb., compared with 44,095,000 lb. in 1948. Export of woollen and worsted yarns at 18,969,000 lb. was a considerable improvement over the 11,818,000 lb. in 1948. For the same period, exports of woollen and worsted tissues totalled almost 81,000,000 sq.yd., compared with nearly 77,000,000 sq.yd. in the same period of 1948. Shipments of blankets were higher than the 1948 figures, and exports of wool waste were 16,019,000 lb., compared with the 1948 figure of 8,260,000 lb. Carpet and rug exports declined slightly from the peak exporting level of 1948.

Production figures of cotton were encouraging. In the week ended Nov. 19 the total output of yarns was a postwar record of 20,750,000 lb., compared with 19,640,000 lb. for the same period in 1948. Total output for the 46 weeks ended Nov. 19 was 873,520,000 lb. According to the cotton board, the weaving sections reached their highest postwar level of output in the four weeks ended Oct. 29. The weekly average was 54,320,000 linear yd. for the month and production was 8% higher than in Oct. 1948. Production for the 43 weeks ended Oct. 29 was 2,121,050,000 linear yd.

The international textile machinery exhibition at Belle-Vue, Manchester, in October, was an important event. It was the first since 1938 and there was evidence to show that the industry was on the threshold of several radical and important individual developments. For the first time, in many cases, textile managers and executives were able to study and examine the latest postwar machines built in Great Britain, the U.S., France, Switzerland, Czechoslovakia, Belgium, Denmark and Italy.

Despite the difficult conditions of world markets, Northern

Ireland continued to export 75% of its linen production; and there was an extension of units spinning woollen yarns, manufacturing carpets and spinning and weaving rayon, etc.

British Commonwealth.—Wool shipments from Australia were higher than in 1948 and no sooner was the devaluation of sterling announced in mid-September than the market began to climb. Average-to-good fleece showed an average appreciation of 10%–12½%. The Australian textile industry steadily expanded and negotiations to establish the first units of a rayon-spinning industry were well advanced. It was intended to form a company with a nominal capital of £A10,000,000 to build factories for production of viscose and acetate rayon.

In India, the exports of cotton piece goods to Pakistan were much reduced but there was an increase in other markets. British East and West Africa absorbed increased quantities and there were smaller increases in Ceylon, Australia and Aden. Toward the end of the year Argentina placed very large contracts for hessian cloths.

The Canadian textile industry was busily engaged throughout the year and, in addition, imported increased quantities of British piece goods, chiefly woollens and worsteds.

Europe.—Textile production increased in most European countries, one of the most important features being the steady increase in western Germany. Belgium also showed signs of revival but production in general was actually less than the 1948 figures. Activity in the French cotton industry recovered and yarn production was at the 1948 level; cloth production was substantially greater. Yarn and cloth production in Italy increased slightly. Textile production in the Netherlands was about the prewar level but substantial quantities of textiles continued to be imported from the United Kingdom.

The textile industry in Czechoslovakia increased the output of yarn and cloth to a high level.

(*See* also Cotton; Rayon and Other Synthetic Fibres; Wool.) (A. Dr.)

Thailand

(Siam). A kingdom of southeastern Asia bounded by Burma to the west and northwest, by French Indo-China to the northeast and east and by Malaya to the south. Area: 198,272 sq.mi.; pop.: (1947 census) 17,256,825; (1948 est.) 17,666,000. Languages: Thai or Siamese *c.* 75%, Chinese *c.* 20%, Indian and Malayan languages also spoken. Religion: Buddhist 95%, Moslem 4%. Chief towns: Bangkok (cap., pop., 1947 est., 827,290); Chieng Mai (pop., 1937 census, 544,001); Khonkaen (473,475); Chieng Rai (443,476). Ruler: King Phumiphon Adundet; prime minister: Marshal Luang Pibul Songgram.

History.—The new constitution, prepared by a constituent assembly during 1948 and submitted to the legislature in Jan. 1949, was approved by the council of regency in March. In its general form the new constitution preserved the system of government by king, cabinet and bicameral parliament, the lower house being elected on a wide franchise and the upper house nominated by the crown. It also defined in detail the rights of the subject, prohibited members of the armed forces from joining political parties, affirmed the independence of the judiciary and defined the purposes of the state which included co-operation with other nations in maintaining international justice and world peace, preservation of the national traditions and maintenance of the principle of private enterprise. Following the promulgation of the constitution, the government announced on May 11 that the official name of the country in English would again be Thailand, instead of Siam, so reverting to the practice of the years 1939 to 1945.

General elections were held, and on the meeting of the legislature in June the cabinet was reshuffled, Marshal Pibul Songgram remaining prime minister. The cabinet secured a vote of confidence in the lower house in July.

No change of importance occurred in the composition of the cabinet till October, when the decision was taken not to maintain the official sterling rate at 40 bahts to the pound but to alter it to 35 bahts to the pound; this decision caused the resignation of the finance minister, Prince Viwat Jayanta, and Marshal Pibul then took charge of the finance portfolio.

On a number of occasions during the year rumours were in circulation of an attempted coup by the Free Thai party, the followers of the exiled statesman, Nai Pridi Panomyong. Suitable precautions were taken by the authorities and only one serious outbreak occurred. According to the official statement, on the night of Feb. 26 members of the Free Thai party attempted a revolution; they seized the royal palace and other important centres in Bangkok, including the broadcasting station from which they announced that Nai Direck Jayanama, a member of the Free Thai and a former ambassador in London (1947–48), had assumed office as prime minister. In the resultant disturbances, misunderstanding between naval and military personnel caused a clash between the two services which was not terminated for two days. The disorders were ultimately suppressed and a number of Free Thai leaders were arrested, four of whom were shot in an ambush while under police escort. Nai Direck later denied that he had had any connection with the attempted coup.

In the field of external relations, the prime minister made an important statement to the press in June, when he stated that Thailand would favour a security pact for southeast Asia on the lines of the North Atlantic treaty. In regard to the possibility of Communist agitation, Marshal Pibul stated that about 200 Chinese Communist agitators had been arrested by the police, and that the possibility of Communist disturbances among the 3,000,000 Chinese in the country could not be ruled out, though he was confident of the ability of the security forces to deal with them. He expressed similar views in a further statement to the press in September, saying that the country was determined to stop any Communist aggression but was short of equipment; in event of war, therefore, Thailand would welcome aid from the western powers. He again expressed approval of the idea of a regional security pact which should include not only the independent states of southeast Asia but also the non-Asiatic states which had interests in the region.

The trial of three men accused of complicity in the death of King Ananda Mahidol on June 9, 1946, continued throughout the year and had not reached its conclusion at the end of December. His successor, King Phumiphon Adundet, continued his studies in Switzerland throughout the year.

It was announced in September that the king and Princess Sirikit Kitiyakara, daughter of the Thai ambassador in London, were engaged to be married. (B. R. P.)

Education.—(1939) government schools 429, pupils 61,297, teachers 3,626; local public schools 10,768, pupils 1,325,891, teachers 32,208; municipal schools 304, pupils 58,592, teachers 1,644; private schools 1,308, pupils 121,965, teachers 5,596; universities 2. Illiteracy: 53%.

Finance.—Budget (in bahts): (1948–49) revenue 1,666,000,000, expenditure 1,848,000,000. Note circulation (Feb. 1948): 2,203,000,000 bahts. Monetary unit: baht or tical with an official exchange rate (Dec. 1949) of 12.5 bahts to the U.S. dollar.

Trade and Communications.—(1948) imports: 1,708,000,000 bahts; exports: 2,022,000,000 bahts. Roads (1946): 3,902 mi. Licensed motor vehicles (Dec. 1948): cars 4,866, commercial vehicles 2,403. Railways (1947–48) 2,034 mi. Shipping (1948): number of merchant vessels 20, total tonnage 11,320.

Agriculture and Fisheries.—Main crops (in metric tons): rice (1948) 5,250,000; maize (1948) 10,000; cotton (1948) 6,000; tobacco (1947) 8,000. Livestock: cattle (Dec. 1947) 3,555,000; buffaloes (July 1945) 3,981,000; pigs (July 1945) 2,014,000; horses (Dec. 1946) 171,000. Fisheries: estimated total catch (1948) 195,800 tons.

Industry.—Electricity (1948) 48,000,000 kw.hr. Raw materials (in metric tons): rubber (1948) 33,000; tin (1948) 4,308; tungsten concentrates (1947) 448.

Theatre. During the season of 1949 clouds gathered over the theatre in the U.S. The League of New York theatres, embracing the principal figures in the operation of the metropolitan playhouses and their subsequent road attractions, instituted an investigation by nonprejudiced analysts, headed by Edward L. Bernays, the purpose of which was to determine how the theatre might be lifted out of the decline into which it had unmistakably fallen, to give it back the nationwide prestige which it had once enjoyed and, finally and perhaps most important, to increase its attendance and box-office receipts.

Bernays, whose staff polled groups in nine selected cities, presented his opinion that the remedy was partly as follows: (1) a clear statement by the league on how in the future it would deal with the public; (2) a manual for producers to pool workable economic production techniques; (3) a clinic in promotion and advertising; (4) the training of theatre staffs on how to conduct themselves with the public, a matter hitherto sadly neglected; (5) a pledge committing the theatre to honest dealing in the practice of ticket distribution—in this connection may be noted the New York city authorities' intervention in the speculation in theatre tickets and the suspension of about 33 brokers' licences; and (6) the institution of a nationwide campaign to acquaint the country at large with the professional theatre.

It was further pointed out as an indication of the theatre's decline that, whereas in the 1928–29 Broadway season 224 plays and shows were produced, only 70 were put on in the 1948–49 season. The number of New York theatres, similarly, was 75 in 1929 and only 32 in 1949, not a single new theatre having been built in 22 yr. and some of those still remaining being leased to radio and television interests.

A further supplementary investigation conducted among 2,500 group leaders and 2,500 representative people in the upper- and middle-income brackets in 27 different cities confirmed the findings, which had originally been confined to the nine cities, and established that 62½% of the people interviewed in cities outside New York city spent less on the theatre during 1949 than on the motion pictures, that the high price of tickets was a factor in diverting patronage, and that the physical discomforts of the average legitimate theatre added materially to the discouragement of theatre attendance. Public opinion was thus operating against the theatre and immediate steps were urged to rectify the situation.

Little, aside from an attempted regulation of ticket sales, had been done toward improving matters when the year came to an end.

While the investigation saw fit to overlook it, the paucity of first-rate plays and shows unquestionably figured largely in the public neglect of the theatre. It also saw fit to overlook the fact that, when first-rate or even fair second-rate attractions were available, the public interest was as great as it had ever been, at times, indeed, even greater. A prime example was to be had in the case of *South Pacific*, the musical comedy by Richard Rodgers and Oscar Hammerstein II, which scored a success unmatched in the later records of the theatre. So eager was the public to see it that speculators often got as much as $50 for a $6.60 ticket, and even standing room was at a premium.

Other plays and shows that proved nothing was amiss with the theatre when attractions were really good were Arthur Miller's *Death of a Salesman*, the best dramatic play of the season; Sidney Kingsley's *Detective Story; Touch and Go*, a topical revue by Jean and Walter Kerr; and various others. Proof was also to be had even when plays were critically defective but had elements of popular appeal, as in Mae West's revival of *Diamond Lil;* James Allardice's farce, *At War with the Army;* the Irving Berlin-Robert E. Sherwood musical, *Miss Liberty;* the musicalized *Gentlemen Prefer Blondes;* the Lunts' vehicle, *I Know My Love*, adapted by S. N. Behrman from the French *Auprès de ma blonde;* the Maxwell Anderson-Kurt Weill musical drama, *Lost in the Stars*, fashioned from Alan Paton's novel of racial prejudice in South Africa, *Cry, the Beloved Country;* etc. And still added proof was to be had in the box-office intake of such held-over attractions, produced at the end of the previous season, as *Light up the Sky, The Silver Whistle, Anne of the Thousand Days, Lend an Ear, The Madwoman of Chaillot* and *Kiss Me, Kate*, not to mention the continued box-office life of veteran exhibits like *Mister Roberts, A Streetcar Named Desire, Goodbye, My Fancy, Born Yesterday* and *Where's Charley?*

Statistics of the Theatre in New York City

	1949	1948
Productions	84	102
Musical comedies	29	34
Plays	55	68
Premieres	46	63
Successful productions	14	21
Performers employed	1,821	2,156
Tickets sold	8,500,000	8,800,000
Approximate cost of production	$3,800,000	$5,250,000
Number of shows booked for other cities	72	84

Among the better-known native playwrights who appeared during the year were Clifford Odets with *The Big Knife*, a play about Hollywood and the moving pictures which was so bad that it drew ridicule not only from the critics but from lay theatregoers; the before-mentioned Sherwood, whose book for *Miss Liberty* was a disappointment to many; Garson Kanin with both *The Rat Race* and the defective *The Smile of the World*, which collapsed after only five performances; Philip Barry with a poor adaptation of a French play by Jean Pierre Aumont called *My Name Is Aquilon;* Samuel Spewack with a negligible comedy, *Two Blind Mice;* and Lillian Hellman with a static and monotonous adaptation of Emmanuel Roblés' French drama about Simon Bolivar and the liberation of Venezuela from Spanish domination, titled *Montserrat*.

Ezio Pinza's abandonment of the operatic for the musical-comedy stage in *South Pacific*, together with his great success in that medium was one of the year's notable features. Least notable was the production of a play called *Anybody Home*, by a novice named Robert Pyzel, which was laughed off the stage after a few performances and which established a low mark for U.S. dramaturgy.

Among the more impressive acting performances were those of A. E. Matthews in the English comedy *Yes, M'Lord*, known in England as *The Chiltern Hundreds;* Mildred Smith in *Forward the Heart;* Lilli Palmer in the revival of Bernard Shaw's *Caesar and Cleopatra* and in *My Name Is Aquilon;* Mildred Dunnock in *Death of a Salesman;* Ralph Bellamy in *Detective Story;* Pinza and Mary Martin in *South Pacific;* Lynn Fontanne in *I Know My Love;* Sir Cedric Hardwicke in *Caesar and Cleopatra;* and Katharine Cornell in a verbose and tiresome romantic historical drama by Kate O'Brien, *That Lady*.

Worthy of mention was the encouragement of theatre building by a projected modifying of the New York building code which had restricted the nature of buildings devoted to dramatic entertainment and prevented floors above them from being rented and used for other business purposes. The institution of the so-called Show-of-the-Month club, patterned after such successful ventures as the Book-of-the-Month club and the Literary Guild, was another feature of the season; and strides were made toward clarifying and extending the benefit buys for legitimate attractions.

Summing up, the dramatic year was very far from satisfactory in a critical direction, but it nevertheless now and again was not quite so ignoble as the wailers made it out to have been. (G. J. N.)

Canada.—The Dominion Drama festival was held in Toronto, Ont., in April with Lord Bessborough trophy honours going to the Hamilton Players' guild production of *John Loves Mary*. *Fortune My Foe*, by Robertson Davies, presented by the Ottawa Drama league won the Sir Barry Jackson trophy for the best Canadian-written play.

Professional theatre experienced uncertainty. Hugh Parker's 1948-founded Stage society of Ottawa went into bankruptcy, and out of its ruins Malcolm Morley created the Canadian Repertory company with plans to use profits to establish a civic theatre. The New Play society of Toronto undertook ten plays for the 1949–50 season, six of which were written by Canadians. Summer theatre appeared in Peterborough, Ont., when Canadian Michael Sadler presented a Canadian-British-American cast in a run of ten weeks. The drama department of the University of Saskatchewan sent a summer-theatre company on a successful tour of prairie rural districts. (C. Cy.)

EZIO PINZA AND MARY MARTIN in a scene from *South Pacific*, which won the New York Drama Critics Circle award as the best musical comedy of the 1948–49 season; music was by Richard Rodgers, lyrics by Oscar Hammerstein II, and book by Hammerstein and Joshua Logan

Great Britain.—An interesting tendency manifested itself during 1949 in the taste of the British playgoing public. This was a readiness to accept with enthusiasm certain plays in which the authors had set out not to tell a connected story, but to let their minds play about a static situation. Two such plays, James Bridie's *Daphne Laureola* and Christopher Fry's *The Lady's Not for Burning*, were among the great successes of the London season.

In *Daphne Laureola*, Bridie's description of his approach to the play was that he had certain things that he wanted to say and tried to keep his audience entertained while he said them. His method of doing so was to invent a magnificently eccentric character, a woman of outstanding quality but a dipsomaniac (beautifully played by Dame Edith Evans). He takes this lady to a restaurant in Soho, and there, having removed her inhibitions with a series of double brandies, he sets her talking at large, to the delight of her fellow-diners and of her auditors in the theatre.

Fry's *The Lady's Not for Burning* was less obscure than Bridie's, but even so was not so instantaneous a success. The importance of the play lay not in the action but in the things Fry had to say, and in the nicely balanced mixture of poetry and wit with which he said them.

T. S. Eliot's *The Cocktail Party* was staged at Edinburgh, Scot., in the first week of the third annual festival there. As a technical achievement this play aroused particular interest, for in it Eliot was held to have brought to a successful culmination the experiments toward a new dramatic verse form which he had been carrying on in his previous plays, *Murder in the Cathedral* and *Family Reunion*. There was remarked an increased facility in the use of verse which could lower itself to the level of ordinary colloquial chatter or rise to the requirements of high poetic emotion.

The central figure of *The Cocktail Party* is a mysterious stranger who, appearing uninvited in a London drawingroom, proves to have an uncanny knowledge concerning the private affairs of his host and hostess and their guests, and leaves an impression both on their minds and the minds of the audience that he is some being of a supernatural order.

Two importations from the U.S., Arthur Miller's *Death of a Salesman* and Tennessee Williams' *A Streetcar Named Desire*, were of special interest, for both had been hailed by critics in the U.S. as plays of outstanding merit, and both were received in England with a certain degree of reserve. Two less controversial U.S. plays which were produced early in the year and were still running when it ended were *The Heiress* and *Harvey*. The former, adapted by Ruth and Augustus Goetz from Henry James's novel *Washington Square* told a good story and told it well, and owed much to the acting of Peggy Ashcroft and Sir Ralph Richardson. The latter, Mary Chase's odd fantasy about a happy dipsomaniac, with Sid Field playing his first "straight" part in the lead, drew a delighted public.

Several established British dramatists added to their reputations during the year though neither J. B. Priestley with *Summer Day's Dream* nor Peter Ustinov with *The Man in the Raincoat* (produced at the Edinburgh festival) was quite at his best.

The Stratford Memorial theatre continued on its increasingly distinguished career and the Old Vic company, reinforced in the spring by the return of Sir Laurence Olivier, made a promising start under its new direction in the autumn. (W. A. Dn.)

Therapy: *see* Chemotherapy; Medical Rehabilitation of the Disabled.

Throat: *see* Ear, Nose and Throat, Diseases of.

Tibet. A country of central Asia, lying north and northeast of the Himalayas, Tibet is mainly a high tableland. Nominally a Chinese dependency, it is in practice independent; it is the only country in the world which is entirely under ecclesiastical control (except the Vatican City state). Area: *c.* 470,000 sq.mi. Pop. (1948 est.): 3,000,000; one-fifth of the male population are monks. Capital: Lhasa. Language: Tibetan. Religion: Buddhist. Ruler: formerly Lhamo Dhondup, the 14th dalai lama, born June 6, 1935 and enthroned in the Potala, or chief palace, on Feb. 13, 1940; regent: Yung Tseng Dala.

History.—The threat to Tibetan independence from Chinese Communism led the regent to make approaches to the U.S. in 1949. The good offices of a traveller from the United States were utilized for the purpose. Later the regent cabled for help. Communist leaders claimed the country as part of China and announced their intention to protect the Tibetans from what they described as the aggressive intentions of the U.S. and Great Britain and to free the people from reactionary feudalism.

The British trade mission was withdrawn after the partition of India. A British firm was to establish a 600-kw. hydroelectric plant to supply current to Lhasa. (W. Bn.)

Finance and Trade.—Monetary unit: sang with an exchange rate (1948) of about 3 sangs to the Indian rupee, but there are considerable fluctuations. Principal imports: cotton goods, woollen goods, grain, hardware, glass, sugar, biscuits, dried fruit and tobacco. Principal exports: wool, borax, salt, musk, horn and herbs.

Timber: *see* Forests; Lumber.

Timor: *see* Portuguese Colonial Empire.

Tin.

World production of tin increased by nearly a third in 1948, but was still more than a third under the 1941 high. Outputs of the major producing countries and the estimated world totals during recent years are shown in Table I, as reported by the U.S. bureau of mines.

Table I.—*World Production of Tin*

(In thousands of short tons)

	1942	1943	1944	1945	1946	1947	1948
Australia	3.3	3.0	2.9	2.6	2.4	2.7	2.1
Belgian Congo	18.1	19.6	19.4	19.1	15.8	16.7	15.5
Bolivia	42.9	46.5	43.5	47.6	42.1	37.3	41.1
China	4.9	3.6	3.7	3.9	1.5	4.5	5.3
Malaya	17.6	29	10.4	3.5	9.4	30.3	49.4
Neth. Indies	11.1	19.7	7.6	1.5	7.2	17.8	32.2
Nigeria	13.9	14.2	14	12.6	1.2	10.2	10.1
Siam	8.8	6.5	3.7	2.0	1.2	1.6	4.6
Others	12.4	12.4	7.8	8.2	8.2	6	7
Total	133	154.5	113	101	99	127.1	167.3

The 1948 total was about on a par with 1939, and was ahead of consumption for the first time since 1943. World smelter capacity had been largely rehabilitated, and the improvement was reflected in imports of metal into the United States in 1948, which more than doubled over 1947.

United States.—The salient features of the tin industry in the United States are summarized in Table II, as reported by the U.S. bureau of mines.

Table II.—*Data of the Tin Industry in the United States*

(In thousands of short tons)

	1942	1943	1944	1945	1946	1947	1948
Imports, total	62.4	41.0	54.8	47.0	60.1	59.7	97.1
In concentrates	32.4	27.5	39.8	37.5	42.7	31.8	42.0
Metal	30.0	13.5	14.9	9.5	17.4	27.9	55.1
Smelter output	18.1	24.1	34.6	45.3	48.7	37.6	41.6
Secondary recovery	38.0	37.9	32.6	39.3	31.0	30.0	30.1
Consumption, total	96.0	90.0	100.8	93.6	90.6	98.7	101.7
Primary	63.0	51.8	66.3	62.3	61.2	66.3	67.0
Secondary	32.9	38.2	34.5	31.3	29.5	32.4	34.6
Stocks, total	149.6	130.9	111.8	93.5	80.3	93.2	111.9
In ore	41.1	45.1	46.0	36.4	27.6	22.7	?
Metal	108.5	85.8	65.6	59.0	52.7	70.5	?

During 1949, smelter operations were maintained at approximately the 1948 level, the output through November totalling 37,253 short tons, against 37,546 tons in the same period of 1948. (*See* also Mineral and Metal Production and Prices.) (G. A. Ro.)

Tires: *see* Rubber.

Titanium: *see* Mineral and Metal Production and Prices.

Tito

(Josip Brozovich or Broz) (1892–), Yugoslav prime minister, was born on May 25 at Kumrovec, Croatia. He served in the Austro-Hungarian army in World War I and in 1915 was captured by the Russians. A prisoner of war until 1917, he joined the Red army and fought with it against anticommunist Russian armies. Returning to Croatia after the war, he became a labour leader and Communist and a Communist party organizer. In 1937 he became secretary-general of the Yugoslav Communist party. After the Germans overran Yugoslavia in 1941, he organized a leftist guerrilla group, which effectively harried axis occupation forces in the country. In Nov. 1942, using the pseudonym of Tito, he organized the Yugoslav Anti-Fascist National Liberation council. In the first months of 1945 all Yugoslavia was liberated and on March 7, 1945, Tito became officially prime minister of Yugoslavia and commander in chief of its armed forces. On June 28, 1948, the Cominform published a statement denouncing Tito for following "an incorrect line in the basic questions of foreign and domestic policy," and particularly for carrying out "a hateful policy in relation to the U.S.S.R."

As the propaganda campaign of all Communist-controlled countries against Tito continued during 1949 to increase in violence, the Yugoslav leader made numerous public replies. On Jan. 21, addressing the congress of the Serbian Communist party in Belgrade, he complained against "the false propaganda directed against a Socialist country." On April 9, at the congress of the Yugoslav People's front in Belgrade, he called for resistance to the Cominform appeal for forcible removal of the existing leadership of Yugoslavia; and he announced that Yugoslavia would not hesitate to trade with the west on equal terms in order to obtain equipment vital for industrialization. In a speech to shopworkers at Belgrade on Sept. 12, he challenged the soviet theory of the exclusive revolutionary role of the soviet army and maintained that progressive ideas could never be propagated by bayonets. Widening the ideological rift between Yugoslavia and the U.S.S.R., he said at Stolice, Serbia, on Sept. 27, that all great powers must understand that they could not buy or sell the freedom of small nations. Later, addressing 600 Yugoslav generals and other officers at Belgrade, Tito proclaimed that the army was prepared to defend Yugoslavia until the last breath and regardless whence the attack came. (*See* also Yugoslavia.)

Tobacco.

The U.S. tobacco crop of 1949 was estimated at 1,990,129,000 lb., compared with 1,980,325,000 lb. in 1948, a ten-year average of 1,718,375,000 lb. and an all-time record crop in 1946 of 2,332,000,000 lb. Yields per acre were lower than the record high 1,274 lb. of 1948, but at 1,224 lb. were far above the 1,033 lb. average for 1938–47. The acreage harvested in 1949 of 1,626,000 was 4.5% more than the 1,554,000 ac. of 1948 and slightly less than the 1,654,000 ac. average of the decade.

Class I flue-cured types of tobacco, produced mainly in coastal plain areas south of Maryland and the chief tobacco entering into cigarettes and the export trade, were estimated at 1,112,168,000 lb. in 1949, 4% larger than the 1,089,584,000 lb. in the preceding year and 12% more than average for the previous decade. The harvested acreage of 936,400 ac. was 6% larger than the 883,800 ac. in 1948 but 4% less than the 1938–47 average. Yields per acre were only 1,188 lb., compared with 1,233 lb. in 1948 and an average of 1,011 lb. for 1938–47. North Carolina was the leading state. Exports of this type were 387,000,000 lb. in 1948–49, or 8% greater than the previous year. Thus, with a 5% larger domestic use, carry-over stocks on July 1, 1949, were slightly below the record of the previous year, but

U. S. Tobacco Production by Leading States

(In thousands of lbs.)

State	1949	1948	Average 1938–47	State	1949	1948	Average 1938–47
North Carolina.	745,120	756,684	685,066	Maryland . .	41,000	34,950	31,551
Kentucky . . .	445,775	466,853	368,552	Wisconsin . .	30,266	28,738	33,653
Tennessee. . .	148,512	148,275	119,098	Ohio	29,220	28,160	24,165
South Carolina.	147,630	131,560	117,124	Connecticut. .	25,464	25,116	22,555
Virginia . . .	137,262	143,790	128,170	Florida . . .	25,061	20,846	19,045
Georgia . . .	116,590	95,763	88,358	Indiana . . .	15,720	14,370	10,957
Pennsylvania .	57,190	61,275	48,934	Massachusetts.	12,624	12,017	9,423

total supply for the marketing year 1949–50 was a new record. The 1949 crop at early sales brought an average price of about 40 cents per pound, approximately 15% below 1948. The national quota for 1950, as announced, would mean acreage allotments about 1% larger than in 1949.

Class 2 fire-cured types, produced mostly in Kentucky and Tennessee, in 1949 yielded 71,150,000 lb., compared with 73,241,000 lb. in 1948 and 81,337,000 lb. average for the previous decade. Acreage, under quota, was still further reduced to 60,400, against a reduction to 62,600 ac. in 1948. In spite of excess moisture early in the season and rain damage prior to harvest, yields were high at 1,178 lb. per acre, whereas 1948 gave only 1,170 lb. and 1938–47 only 954 lb. Carry-over of 156,000,000 lb. was slightly smaller than in 1948, and the supplies, a considerable part of which were used in making snuff and chewing tobacco, were fully ample to meet domestic use and prospective exports.

The burley-type tobacco crop of 1949 amounted to 586,257,000 lb., compared with 602,902,000 lb. in 1948 and 445,005,000 lb. average 1938–47. Yields were less than the record 1,396 lb. of 1948, but at 1,305 lb. were far larger than the 1,048 lb. average for 1938–47. The harvested acreage of 449,200 was large compared with either the 432,000 of 1948 or the decade average of 420,230. Carry-over stocks on Oct. 1 were estimated at 965,200,000 lb., giving a record total supply about 7.5% above the previous year. It was estimated that the price would be somewhat lower than the average of 46 cents per pound received for the 1948 crop.

The southern Maryland tobacco (type 32) crop of 1949 totalled 41,000,000 lb., compared with 34,950,000 lb. in 1948 and 31,551,000 lb. average 1938–47. The per acre yield in 1949 was 820 lb., well above the 750 lb. of 1948 and the 765 lb. average of 1938–47. Carry-over stocks were about the same as in the previous year, but exports lagged. The 1949 sales of the 1948 crop gave an average price of 54.5 cents per pound, compared with a wartime peak of 57 cents.

The 1949 crop of dark air-cured type tobacco was 36,602,000 lb., 5% more than the 34,772,000 lb. of 1948 and well below the 39,207,000 lb. for the preceding decade. The per acre yield of 1,158 lb. was near record, comparable with 1,163 lb. in 1948 and an average for the decade of 999 lb.

Cigar types of tobacco in 1949 were produced in an amount of 142,752,000 lb., about 1% less than in 1948 but well above the 131,162,000 lb. average for the decade 1938–47.

The total U.S. cigarette output in 1949 was about 392,000,000,000, a new record, compared with 387,000,000,000 in 1948. Cigar consumption declined to about 5,600,000,000 in 1949, compared with 5,800,000,000 in 1948, with those below 8 cents in price increasingly emphasized. Cigarette exports in 1949 were at only about 84% of the record level of 25,179,000,000 attained in 1948.

The world's tobacco harvest during the year July 1949 through June 1950 was forecast at 7,100,000,000 lb., compared with a revised estimate of 1948–49 production of 7,300,000,000 lb. and the prewar average (1935–39) output of 6,597,000,000 lb. (*See* also AGRICULTURE.) (J. K. R.)

Tobago: *see* TRINIDAD AND TOBAGO.

Tobin, Maurice Joseph

(1901–), U.S. secretary of labour, was born in Roxbury, Mass., on May 22. He worked for the New England Telephone and Telegraph Co. for a number of years, served in the Massachusetts legislature, 1927–28, was mayor of Boston, 1937–44 and governor of Massachusetts, 1944–46. In 1948 Pres. Harry S. Truman appointed him secretary of labour.

In 1949 Tobin termed the Taft-Hartley labour law "a device to punish and hamstring unions," and demanded its repeal. He advocated raising unemployment benefits and declared that "a sound insurance system" to guarantee each retired person $100 a month should be enacted immediately. Tobin supported the steel workers' union in its strike against the steel companies, and also supported a new, anti-Communist C.I.O. electrical workers' union after national C.I.O. authorities had ousted the former electrical workers' union as being left-wing dominated.

Togoland: *see* BRITISH WEST AFRICA; FRENCH UNION; TRUST TERRITORIES.

Tongan Island Protectorate: *see* PACIFIC ISLANDS, BRITISH.

Tongking: *see* FRENCH UNION.

Tornadoes: *see* DISASTERS.

Toronto.

In 1949 the population of the capital city of Ontario, Can., dropped to 673,104 (plus about 155,000 in surrounding suburbs). In the Jan. 1, 1949, elections 32% of the voters returned sitting aldermen and school trustees, including two Communists in each group, but voted down for the fourth time a bylaw proposing two-year instead of one-year terms. Preparing for the 1950 election, the city council readied bylaws to place the election date in December and to permit commercialized Sunday sport.

On Sept. 6, 1949, the Toronto transportation commission took the first steps toward the construction of a four-mile $30,000,000 subway to move 40,000 passengers per hour at 18 m.p.h. instead of 14,000 passengers 6 m.p.h. with streetcars. All engineering functions relating to traffic were transferred from several city hall departments and co-ordinated under the Toronto city planning board. After a review of traffic problems, 80 new signals were installed, all streets got new signs costing $250,000, and a survey was made of 67,000 motorists requiring daytime downtown parking as a step toward solving their problems. The master plan of the city planning board, which advocated express-ways and traffic tunnels to harbour islands, went before the city council on Sept. 12, but no decisions had been announced by Dec. 31. In 1948 building permits totalled $32,300,000 (about the same as 1947); civic expenditures ran to $48,736,267 (1947: $45,037,977). (C. Cy.)

Town and Regional Planning.

In 1949 some progress was made in realizing postwar plans in the cities and towns of Europe and the Americas. Studies for comprehensive plans of cities were published in Great Britain, the Netherlands, Belgium, Norway, Sweden, Poland and Italy. In many of the English plans provision was made for lower densities of population in the congested centres, and many reconstruction plans in the war-torn cities of Europe included neighbourhood units protected by green zones. In Latin America, revised plans were made for Lima, Peru, and Buenos Aires, Arg. In Canada, a committee was formed to promote the planned development of Ottawa, Ont., and a National Planning conference was held in October at Winnipeg, Man.

In the United States two national planning conferences were held: the National Citizens Conference on Community Planning, sponsored by the American Planning and Civic association, at Oklahoma City, Okla., March 27–30, 1949; and the National

Planning conference, sponsored by the American Society of Planning Officials, at Cleveland, O., Oct. 10–12, 1949.

Private building of houses and apartments continued to dominate construction. Postwar plans contained many projects for public buildings and works, but actual construction awaited easing of the acute housing shortage. A number of cities listed public works projects to be realized in five- and six-year improvement programs.

In Tennessee and Connecticut, state planning agencies stimulated planning for cities and towns. In Connecticut all communities were urged to prepare comprehensive plans, including land-use maps, before adopting zoning plans. In Tennessee, the state planning board fostered public school courses in planning.

On July 8, 1949, congress passed the National Housing act, authorizing an 810,000 housing-unit program to be built in the succeeding six years. The act also provided for local planning for housing projects to conform to the comprehensive plan and set up a program of slum clearance under which urban redevelopment plans were being submitted to the Housing and Home Finance agency.

The congestion of downtown streets in U.S. cities continued to be a major problem. Parking metres at the curb aided somewhat, and net proceeds in some cities were devoted to purchase of space for offstreet parking. In spite of increased facilities for parked automobiles, many drivers abandoned their cars for downtown trips, and this added to the load of public transit companies. A number of cities abandoned some or all street car tracks and substituted buses.

Most cities in the United States improved or enlarged their airports during the year; new and larger airports were planned to care for planes needing longer runways. Some cities made planning studies to locate airports in conformity with the comprehensive plan for the region.

A score of universities offering degrees in planning were listed in the July *Planning and Civic Comment*. There was a tendency for universities to include courses in regional and national as well as city and town planning.

The citizen movement to support planning continued to grow. In addition to many existing local organizations, the American Planning and Civic association published work sheets for about 50 local and regional planning associations. (*See* also HOUSING.)

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FILMS OF 1949.—*New Town* (British Information Services).

(H. Js.)

Track and Field Sports.

Probably the outstanding occurrence in track and field sports in 1949 was the successful invasion of Europe by a team of U.S. athletes who had qualified for the trip by their performances in the National A.A.U. outdoor championships at Fresno, Calif. The U.S. squad competed in ten European countries, breaking record after record, and climaxed the season by conquering a combined force of Scandinavian stars, $238\frac{1}{2}$ to $224\frac{1}{2}$, in a three-day meet at Oslo, Nor.

Although numerous sectional, national and world marks tumbled during the year, comparatively few had been accepted as the year drew to a close.

Jim Fuchs, 220-lb. Yale senior, heaved the 16-lb. shot 58 ft. 4 $\frac{27}{64}$ in. to surpass a world record at Oslo. Fuchs won the Intercollegiate A.A.A.A., National Collegiate A.A. and National A.A.U. championships and lost in only two title meets—the National A.A.U. indoor and the Metropolitan senior.

Fortune Gordien fared equally well in the discus throw, showing utter disregard for records. His throw of 186 ft. 11 in. at Tavastehus, Fin., on Aug. 14 was recognized as a world mark by the International Amateur Athletic federation.

Mel Patton, Craig Dixon, Mal Whitfield, Don Gehrmann, Fred Wilt and Bob Mathias, all Olympians of some stature, starred again and Andy Stanfield, Charles Moore, Jr., and Dick Phillips stood out as newcomers.

Patton, the Southern California ace, was unbeaten in the sprints before quitting competition for a coaching job. He did not equal his record of 9.3 sec. which he set the previous year for the 100-yd. dash, but he produced a mark of 20.2 sec. for 220-yd. dash. Stanfield of Seton Hall won the National A.A.U. 100-m. and 200-m. titles, tying the A.A.U. records of 10.3 sec. and 20.4 sec. He also took the I.C.4-A indoor 60-yd. dash, the outdoor 100-yd. and 220-yd. dashes and starred abroad.

Dixon of the University of California at Los Angeles had a perfect outdoor hurdling season and defeated Harrison Dillard in the National A.A.U. high hurdles event. Dillard was defeated only once indoors, but was troubled by a back ailment during the outdoor drive. Whitfield of Ohio State had trouble on the boards, but settled down later to take the N.C.A.A. outdoor 880-yd. run, the National A.A.U. 800-m. run and register a double at Oslo. Gehrmann of Wisconsin outran Willy Slykhuis of the Netherlands in his only eastern start on the boards, win-

FOUR-LEVEL CLOVER-LEAF highway intersection under construction in Los Angeles, Calif., in 1949, as part of a network of freeways designed to unsnarl the city's traffic problems

Outstanding U. S. Track and Field Performances (Outdoor), 1949

100 Yd.

9.4 sec.—Dillard, Cleveland
9.5—La Beach, Shore A.C.; Reynolds, Texas; Samuel, Texas; Smith, Graham high school, Texas; Patton, U.S.C.; Carter, Howard Payne; Tyler, Morgan State

220 Yd.

20.2 sec.—Patton, U.S.C.
20.3—La Beach, Shore A.C.; Bienz, Tulane
20.4—Stanfield, Seton Hall

440 Yd.

46.2 sec.—Whitfield, Ohio State
46.4—Rhoden, Morgan State
46.8—McKenley, Shore A.C.
46.9—Bolen, Boulder, Colo.

880 Yd.

1 min. 50.3 sec.—Whitfield, Ohio State
1:50.5—Crawford, Texas; Barten, Michigan
1:52.1—Bowers, Kansas
1:52.5—Chambers, U.S.C.

One Mile

4 min. 9.6 sec.—Gehrmann, Wisconsin
4:09.7—Thompson, unattached, Texas
4:10.4—Wilt, New York A.C.
4:13.4—Montes, Texas Mines

Two Mile

9 min. 3.9 sec.—Ashenfelter, Penn State
9:05.2—Wilt, New York A.C.
9:12.9—McMillen, Los Angeles A.C.

120-Yd. High Hurdles

13.8 sec.—Dillard, Cleveland; Dixon, U.C.L.A.
13.9—Anderson, Compton
14—Fleming, Notre Dame

220-Yd. Low Hurdles

22.5 sec.—Hall, Texas A. & M.; Dixon, U.C.L.A.
22.7—Erfurth, Rice
22.9—Johnson, Michigan State; Martin, Fresno State; Smith, Michigan State

440-Yd. Hurdles

51.1 sec.—Moore, Cornell
51.4—Ault, Missouri

16-Lb. Shot-put

58 ft. 4⅜ in.—Fuchs, Yale
56: 6¾—Lampert, N.Y.U.
56: ¾—Chandler, Stanford

Discus Throw

186 ft. 11 in.—Gordien, Olympic club
177: 11¼—Frank, Yale
170: 5⅛—Lewis, U.C.L.A.

Javelin Throw

232 ft. 2½ in.—Held, Olympic club
230—Biles, Olympic club
221: 10½—Pickarts, Santa Barbara

16-Lb. Hammer Throw

183 ft. 4½ in.—Felton, New York A.C.
183: 3⅞—Dreyer, New York A.C.
176: 11⅛—Scholtz, Army

High Jump

6 ft. 8 5/16 in.—Walters, Texas
6:7⅞—Phillips, Brown; Mondschein, N.Y.U.
6:6⅞—Eddleman, Illinois

Broad Jump

25 ft. 4¾ in.—Bryan, Stanford
25:2½—Brown, Jordan high school, Calif.; Johnson, Michigan State

Pole Vault

14 ft. 7⅜ in.—Montgomery, U.S.C.; Richards, Illinois A.C.
14:4—Rasmussen, Oregon

Hop, Step and Jump

49 ft. 1 in.—Bryan, San Francisco Olympic Club
48:11 27/64—Albens, Elizabeth, N.J.
48:8 9/32—Koutonen, Fitchburgh, Mass.

One-Mile Relay

3 min. 13.3 sec.—Rice
3:13.4—New York Pioneer club
3:14—Cornell

Decathlon

7,556 points—Mathias, Tulare, Calif.
7,044—Mondschein, N.Y.U.
6,698—McConnell, Nebraska
6,668—Terwilliger, Madison, Wis.
6,259—Smith, Oklahoma

ning the Wanamaker mile in 4 min. 9.5 sec. However, his best time outdoors, as he took the N.C.A.A. mile, was 4 min. 9.6 sec. Wilt came to the front as a distance ace, pressing the European stars who specialize in the longer contests. He scored a notable double in winning the National A.A.U. 5,000-m. and 10,000-m. honours, breaking the record for the longer race with a clocking of 31 min. 5.7 sec.

Mathias kept his A.A.U. decathlon championship and triumphed at Oslo. Moore was sensational in winning the N.C.A.A. 440-yd. run in 47 sec. and then taking the A.A.U. 400-m. hurdles in the national record time of 51.1 sec. Phillips of Brown university, Providence, R.I., hit 6 ft. 7 in. consistently in the high jump.

The invasion of five Europeans—Gaston Reiff of Belgium, Willy Slykhuis of the Netherlands, Marcel Hansenne of France and Eric Ahlden and Ingvar Bengtsson of Sweden—marked the U.S. indoor season. Four of them scored 12 victories in 16 races and Reiff won the National A.A.U. three-mile title.

The New York A.C. won National A.A.U. indoor honours and the Los Angeles A.C. was the top team outdoors. Southern California, with the aid of Patton's double in the outdoor sprints, won both N.C.A.A. championships and Michigan State took I.C.4-A crowns indoors and out.

Tuskegee institute of Alabama retained the women's National A.A.U. championship outdoors. Mrs. Nancy Phillips of the German-American A.C. of New York won both the high and broad jumps for scoring honours in the National A.A.U. indoor games as she paced her squad to the team laurels. (T. V. H.)

Trade Agreements: *see* International Trade; Tariffs.
Trade Commission, Federal: *see* Federal Trade Commission.
Trade Unions: *see* Labour Unions.
Traffic Accidents: *see* Accidents.

FANNY BLANKERS-KOEN of the Netherlands leading in the women's 80-metre hurdle, a special event during the Intercollegiate A.A.A.A. championship meet at Randall's Island, N.Y., May 27, 1949. Mrs. Blankers-Koen, who was on a brief visit to the U.S., won the event in 12 sec.

Trans-Jordan: *see* Jordan.
Transportation: *see* Aviation, Civil; Electric Transportation; Motor Transportation; Railroads.
Trap-shooting: *see* Shooting.
Treason: *see* Federal Bureau of Investigation.
Treasury, U.S. Department of: *see* Government Departments and Bureaus.

Trieste, The Free Territory of.

A small state at the northern end of the Adriatic sea, between Italy and Yugoslavia, demilitarized and neutral, whose integrity and independence were assured from Sept. 15, 1947, by the Security council of the United Nations. Total area: 293 sq.mi. Total pop. (June 1949 est.): 345,000. Military governors under provisional regime: zone A, British-U.S. (area, 96 sq.mi.; pop., 285,000), Maj. Gen. Terence S. Airey; zone B, Yugoslav (area, 197 sq.mi.; pop., 60,000), Col. Mirko Lenač. Mayor of the city of Trieste; Gianni Bartoli.

History.—During 1949 the problem of Trieste remained unsolved; the British, French and U.S. governments stood by their declaration of March 20, 1948, suggesting the return of the free territory to Italian sovereignty, and the soviet government refused to agree to a revision of the Italian peace treaty which it considered unwarranted. Although in Jan. 1948 the Security council of the U.N. had been unable to agree over the appointment of a governor for the free territory, on Feb. 17, 1949, Jacob A. Malik, the soviet representative, reopening the controversy, proposed that the council should nominate Hermann Flueckiger, a Swiss diplomat, one of the candidates who had been put forward a year before by the British government and rejected by Moscow. The soviet delegate renewed his proposal in March and again in May, when it was rejected by 9 votes to 2.

On June 12 the people of Trieste freely elected their municipal council for the first time for 27 years. The elections were quiet and orderly and the six Italian parties which favoured the restoration of Trieste to Italy received 63.7% of the total of 172,036 votes cast.

On July 3 the Belgrade government announced its decision to introduce Yugoslav currency in zone B (or Yugoslav-occupied) of the free territory. The yugo-lira, an occupation money introduced in Sept. 1947 which exchanged with the Italian lira (legal tender in Trieste) at the rate of one yugo-lira for two lire, was discontinued. The Yugoslav dinar was introduced instead with an exchange rate of one dinar for nine lire. (This Yugoslav reaction to the June elections seemed to be more than a monetary reform. A monetary union is practically an economic one and this could lead to political union). As the Yugoslav decision was technically a violation of the peace treaty (but so had been the creation of the yugo-lira in 1947), the Italian government protested to the Security council.

At the close of 1949, Trieste's economic recovery still awaited the end of the "cold war" and an active east-west trade.

Economy and Finance.—Budget (1948–49): revenue L. 12,800,000,000; ordinary expenditure L. 13,800,000,000; extraordinary expenditure L. 16,300,000,000; total deficit L. 17,300,000,000. During the year 1948–49 the ECA allocation to Trieste was $17,800,000. For the year 1949–50 the Allied military government asked for $12,600,000.

Bibliography.—European Recovery Program, *Trieste Country Study* (1949). (K. Sm.)

Trinidad and Tobago.

This British colony consists of two islands off the South American continent north of the Orinoco river delta. Area: 1,980 sq.mi. Pop. (1948 est.): 590,000. Governor, Major General Sir Hubert Rance.

History.—Details of a new constitution were announced in February 1949; although not yet promulgated, preparations for its introduction, including the appointment of a speaker, were made. It provided for a governor possessing restricted reserve powers and presiding over an executive council which also included three *ex-officio,* one nominated and five elected members, these last to be chosen by the legislative council from among their unofficial members and to be actively associated with the work of administration of departments of government. The legislative council, presided over by a speaker appointed by the governor from outside the council, was to consist of three *ex-officio,* 5 nominated and 18 elected members, the speaker having neither an original nor a casting vote.

Finance and Trade.—Currency: West Indian dollar with an exchange rate, Nov. 15, 1949, of 58.33 cents U.S. Budget (1949 est.): revenue $42,627,045; expenditure $41,554,367. Foreign trade (1948): imports $131,822,264; exports, domestic $127,105,384, re-exports $5,521,749. Principal exports: petroleum and sugar. Sugar crop for 1948–49 was estimated at 159,032 tons, an all-time record. (Jo. A. Hn.)

Tripolitania: *see* Italian Colonial Empire.
Trolley Coaches: *see* Electric Transportation.
Trucial Sheikhs: *see* Arabia.
Truck Crops: *see* Vegetables.
Trucks: *see* Automobile Industry; Motor Transportation.

Truman, Harry S.

President Harry S. Truman underwent a metamorphosis in 1949 that surprised both friends and enemies. The erstwhile modest Missourian, who regretted publicly that circumstances had catapulted him into the White House, and whose defeat in the 1948 election was generally regarded as a certainty, stepped forth as a confident, determined and aggressive leader of his party and the nation. Nor did he shrink from asserting himself as a spokesman and director of world affairs.

The new Truman appeared for the first time when he delivered his inaugural address on Jan. 20. He scrapped the famous Roosevelt slogan of the New Deal, substituting for it his own Fair Deal. In this address, in other speeches and in subsequent messages to congress, his Fair Deal demands were: repeal of the Taft-Hartley act and enactment of the Brannan farm plan; compulsory national health insurance; civil rights legislation; extension of social security; federal aid to education and health; stronger antitrust laws; greater development of public power; rent control; and housing for middle- and low-income groups.

"VICTORY PARADE," a cartoon by Justus, published in 1949 in the *Minneapolis Star*

Combating inflation, Truman emphasized, was the nation's principal problem. To this end he demanded new taxes totalling $4,000,000,000. He also asked for an eight-point anti-inflation program giving the government the right to control the supply of goods and credit and to build industrial plants, if necessary, to overcome commodity shortages. As prices fell and production rose during the year, he virtually abandoned these requests.

In the field of foreign affairs he urged continued support of the United Nations, the European Recovery program and the North Atlantic treaty. He advanced a new scheme for world co-operation with a proposal for improvement of underdeveloped areas through public and private investment overseas.

Congress refused to pass the greater part of his domestic program because of a hostile combination of Republicans and conservative Democrats, the latter mostly from the South. Nevertheless, the legislative rebuff did not discourage the president. Addressing a Jefferson-Jackson day dinner on Feb. 24, he said that "all we have on our side are the people." He declared that the party "was never more united or stronger, or more dedicated to the people's welfare." He predicted a Fair Deal victory in 1950 and 1952.

On April 12, the fourth anniversary of former President Franklin D. Roosevelt's death, Truman made one of his several appearances on Capitol Hill. Speaking from near his old seat in the senate, he said he had tried to do his best for the people and hoped he had not failed. Despite bitter criticism of his Fair Deal policies, Republicans and Democrats alike showed their personal friendliness for him at a luncheon given by J. Harold McGrath, senator from Rhode Island and Democratic national chairman.

Truman maintained keen interest in party politics. He attended numerous partisan dinners and receptions at Washington, D.C., and at Kansas City, Mo., usually making a formal address or an impromptu "pep talk." He refused to comment, however, on accompanying speculation that he might seek re-election. After the 1948 contest he had said he would not run again.

On Labor day Truman delivered two rousing campaign speeches, to factory workers at Pittsburgh, Pa., and to a farm audience at Des Moines, Ia. Recalling how effectively they had worked to elect him, he urged the two groups to organize a permanent political alliance. At Pittsburgh he said that his philosophy of politics and government was based on the sermon on the mount. Assailing his opponents as "selfish interests and standpatters," he said: "They're still doing all they can to slow up our progress, but they're not able to stop us."

Addressing 400,000 people at the Minnesota state fair in St. Paul in early November, he declared that he expected congress to enact most of his Fair Deal program at the 1950 session. Referring to the opposition's derogatory characterization of his theories as foreshadowing a "welfare state," he said that he appreciated the description and welcomed the challenge. He regarded the results of scattered off-year elections on November 8, which were favourable to the Democrats, as an endorsement of his record.

The one surviving member of the Roosevelt cabinet left early in 1949 when James V. Forrestal resigned as secretary of national defense, to be replaced by Louis A. Johnson of West Virginia. Others to resign during 1949 were Gen. George C. Marshall as secretary of state, Julius A. Krug as secretary of the interior and Tom Clark as attorney general to accept an appointment to the supreme court. In their places Truman named, respectively, Dean Acheson of Maryland, Oscar Chapman of Colorado and Senator McGrath of Rhode Island. When McGrath resigned as national chairman, William M. Boyle, Jr., former Kansas City policeman, succeeded him. (*See* also UNITED STATES.)

(R. TU.)

Trust Territories.

Under this heading are grouped former German colonies in Africa and Australasia which became League of Nations mandates after World War I and United Nations trusteeships after World War II. Their total area is approximately 1,033,297 sq.mi. and the total population 16,142,400. Certain esential information on the respective territories is given in the table.

History.—Developments which might prove to be of great moment took place in the trusteeship system of the United Nations during 1949. A continual study of the whole system was maintained so that it became possible to obtain clearer indications of the direction in which the experiment was moving.

All the trust territories sent in their annual reports—including, for the first time, the Pacific islands (also a strategic area) which was administered by the U.S.A. The Trusteeship council examined the reports at length, bringing into view the political, social, economic and educational development of the peoples during this period, and adopted resolutions thereon. It noted an increasing tendency to take advantage of the right of petition, which had been stimulated by the council's mission to east Africa in 1948.

Broadly speaking, majorities of the council approved of the progress made, particularly in the social and economic fields in spite of difficulties of climate, ethnology and finance. But there was considerable criticism, some of it constructive and helpful, some marked by little sense of proportion. The latter tendency was met with on a larger scale at the fourth assembly in New York, resolving itself into an increasing conflict between the powers of the administrations on the spot and the claims of those who, to a large or small degree, were opposed to the existing colonial system.

The Trusteeship council further undertook two far-reaching studies, the course and length of which were to depend on future developments: first, of the effect of administrative unions, such as that between Tanganyika and Kenya and Uganda, on the status and progress of trust territories; second, of the implications of expanding facilities for higher education in these areas. The reports of the council's mission to east Africa—Tanganyika and Ruanda-Urundi in 1948—were closely examined and their conclusions broadly adopted with a stress on the increasing need of speed. A further mission started for west Africa—the two Togoland and Cameroons trust territories—at the close of the year. A third was to visit the Pacific islands (with due regard to their being a strategic area) early in 1950.

When the fourth assembly met, the trusteeship issue was expanded to include colonial government in general and became larger in international discussion than any other subject except the determined and hardening difficulties between the U.S.S.R. and the western powers.

A number of resolutions were adopted. The special committee on information from nonself-governing colonies was given larger powers and prolonged for a further three years. Hitherto, in accordance with article 73 (e), Great Britain and other administering powers had forwarded to the secretary general of the United Nations, for information purposes, statistical and technical information on economic, social and educational conditions in the areas for which they alone were responsible. The act was voluntary and excluded political information. The assembly now asked these colonies to supply information on political and constitutional developments and to appoint a committee with powers of roving inquiry. Great Britain and other administering powers objected on the ground that the new proposals went beyond the charter and tended to assert the principle of international supervision over all colonies.

Enlargement of the powers of the Trusteeship council also came from another quarter, being part of the program finally adopted by the general assembly for the solution of the postwar

Trustee and Mandated Territories

Territory	Area (in sq.mi.)	Population	Date of League of Nations Mandate	Date of United Nations Trusteeship	Administering Authority
*South-West Africa	317,725	(1948 est.) 369,000	Dec. 17, 1920	—	Union of South Africa
Togo, comprising					
(1) Togoland; *i.e.*, western section, excluding the seaboard	13,041	(1948 est.) 380,000	July 20, 1922	Jan. 25, 1947	Great Britain
(2) Togo; *i.e.*, eastern section and seaboard	21,235	(1948 est.) 953,000	July 20, 1922	Jan. 25, 1947	France
Cameroons, comprising					
(1) Cameroons adjoining Nigeria	34,081	(1948 est.) 1,000,000	July 20, 1922	Jan. 25, 1947	Great Britain
(2) Cameroons adjoining French Equatorial Africa	169,436	(1948 est.) 2,820,000	July 20, 1922	Jan. 25, 1947	France
Tanganyika	362,688	(1948 census) 7,074,160	July 20, 1922	Jan. 25, 1947	Great Britain
Ruanda-Urundi	20,120	(1948 est.) 3,782,000	July 20, 1922	Jan. 25, 1947	Belgium
New Guinea, Territory of, comprising:	93,000	(1948 est.) 915,000	Dec. 17, 1920	Jan. 25, 1947	Commonwealth of Australia
(1) Northeastern New Guinea	69,700				
(2) Bismarck archipelago	19,200				
(3) Certain of the Solomon Islands (Bougainville, etc.)	4,100				
Western Samoa, comprising Savaii, Upolu, etc.	1,133	(1948 est.) 73,000	Dec. 17, 1920	Jan. 25, 1947	New Zealand
Nauru	8	(1948 est.) 3,000	Dec. 17, 1920	Nov. 15, 1947	Australia
Pacific Islands North of the Equator, comprising:	830	(1948 est.) 51,000	Dec. 17, 1920	April 2, 1947	U.S.A. (formerly Japanese mandates)
(1) Mariana or Ladrone Islands (except Guam)					
(2) Caroline Islands, together with Yap Island and Palau Island					
(3) Marshall Islands					

*Controversial status.

problem of the former Italian colonies. Libya, for example, was to be constituted as a sovereign state by Jan. 1952; and to assist the inhabitants in the transition, help them to make their own constitution and administer the territory in the interval, a U.N. high commissioner was to be appointed, with a council of ten, who was to report to the next assembly. Next, Somaliland was to become a sovereign state ten years after the approval of a trusteeship agreement by the Trusteeship council and the general assembly, with Italy as administering authority, aided by a council of three. As regards Eritrea, a U.N. commission of five was to try to find out the best means to promote the wishes and the welfare of the inhabitants and to report to the fifth assembly.

Thus, there appeared to be two converging movements in the development of the trusteeship system, one tending to enlarge the power of the U.N. to the point of taking actual part in the process of administration in trust territories and the other to extend methods of internationalization to all nonself-governing territories. By the charter the proper role of the U.N. was to watch, criticize, admonish if need be and generally supervise territories administered under trust, but not to take any part in the actual process of administration.

Finally, at the close of the session a majority of the nations in the U.N. fourth general assembly gave further evidence of the increasing pressure which might be brought to bear on colonial powers. This was especially clear in their attitude toward the Union of South Africa's refusal voluntarily to transfer South-West Africa, which they persisted was held under a mandate, to a trust territory under the U.N. Three measures were taken. A resolution was adopted calling on South Africa to resume the submission to the assembly of annual reports on South-West Africa. What might become a precedent was created by the hearing given by the assembly to the Rev. Michael Scott on behalf of the Herero tribe, inside a former mandated area. Lastly, the International Court of Justice at The Hague, Neth., was asked for an opinion on three questions: What are the international obligations of the South African government in this former mandated area? Has the South African government the right to modify the international status of South-West Africa (a problem hotly debated under the League of Nations), and if not, who has the right? Is South-West Africa subject to the provisions of chapter XII of the charter? (*See* also INTERNATIONAL LAW; ITALIAN COLONIAL EMPIRE; UNITED NATIONS.)

FILMS OF 1949.—*Pacific Island* (International Film Foundation, Inc.).

(M. FE.; X.)

Tuberculosis.

Diagnosis.—Although the tuberculin test remained the only practical method of diagnosing tuberculosis early in its development, P. Courmont (Switzerland) stated that he was able to diagnose before tissues became sensitive to tuberculin by serum agglutination.

E. Friedman (Boston) found that antihistamine medication had no effect on the tuberculin reaction. W. W. Jones *et al.* (Denver) confirmed the fact that repeated testing with tuberculin does not cause people to become reactors, nor does it accentuate or suppress sensitivity already present.

Charlotte Silverman reported on mass radiography of 48,175 apparently healthy persons in Baltimore. The number of persons (662) classified as having definite or suspected tuberculosis by miniature films, decreased through successive steps of the examination. Reinspection by large chest films for which 86% returned reduced the number from 662 to 292 as having "definite X-ray evidence" of tuberculosis, and of these only 125 were thought to have clinical disease. Further processing reduced the number to 89 which the health department successfully followed for a year or more, of whom only 32 were found to have unquestioned clinical activity.

Limitations of mass chest X-ray surveys observed in 1949 were: (1) unsatisfactory response of the people (rarely more than 75% to 80% of those eligible); (2) persons with clear films may develop tuberculosis within weeks or months. W. Roemmich (Minneapolis) reported 23 bacteriologically diagnosed cases of pulmonary tuberculosis which were found within a year after survey X-ray films of their chests were clear.

Prevalence.—In Brazil the mortality rate was 246 per 100,000 population. A. A. Dufourt stated that there had been a great reduction in death rate from tuberculosis in France since 1900, but there were long waiting lists for sanitorium beds. In Greece, the rate was approximately 250 per 100,000 and there were fewer than 5,000 sanatorium beds. G. Hensel stated that 80% of the children leaving school in Germany reacted to tuberculin, against 30% to 40% before World War II.

B. Mann stated that in India 500,000 persons were dying annually from tuberculosis. G. R. Kokatnur estimated the number of active cases at 2,000,000; sanatorium beds were available for approximately 1%. In Turkey, the mortality rate was 267 per 100,000; free government sanatoriums and hospitals had a patient waiting list of about 3,000.

The 1948 mortality rate from tuberculosis in the United States was slightly less than 30 per 100,000 population. There was evidence suggesting that it was in the vicinity of 27 in 1949—(total 48,000)—lowest of any nation in the world with the possible exception of Australia. Approximately 103,819 beds were available. A. Reifel (Detroit) pointed out that the mortality from tuberculosis among Indians is five times that of the general population.

Treatment.—T. J. Kinsella and associates (Minnesota) reported the results of thoracoplasty done on 613 tuberculous patients between 1922 and 1943. Five to 20 years after operation, 66.8% were alive and 27.57% ultimately died from tuberculosis or its complications. Since 1931, the post-operative mortality (8 weeks) had been 3% per patient and 1.16% per operation. In 88.1% of the patients whose sputum contained tubercle bacilli prior to surgery, the organisms subsequently were not found.

By a surgical procedure known as decortication, J. A. Weinberg, and associates, (California) expanded lungs which had been collapsed by artificial pneumothorax and were otherwise unexpandable. G. W. Wright (Saranac Lake, N.Y.) and J. G. Gordan (Ray Brook, N.Y.) found that some such lungs do not function normally even though they are well expanded.

J. H. Grindlay (Minnesota) removed one lung from each of 21 dogs and in each case replaced the lung with a single unit prosthesis consisting of a roughly lung-shaped bag of polythene filled with fibre glass. This experimental work gave promise of leading to the development of a suitable prosthesis to replace the large undesirable spaces which result from removal of diseased lobes or lungs in humans.

S. A. Waksman (New Brunswick, N.J.) reported a new antibiotic, neomycin, to be more active than other antibiotics against both pathogenic and saprophytic microbacteria. It was active against both streptomycin-sensitive and resistant microbacteria; moreover, it did not allow rapid development of resistance among the organisms as did streptomycin.

One of the thiosemicarbazonens designated as T.B.1/698, announced by G. Domagk in 1946, was reported by F. Knüchel, *et al.*, and J. Hartung (Germany) as having a beneficial effect on tuberculous lesions.

The effects of streptomycin on tuberculosis had been carefully investigated by the United States Veterans' administration in co-operation with the army and navy for three years, and its usefulness and limitations were fairly well delineated. In 1949 these studies were extended by examining the effects of dihydrostreptomycin and para-aminosalicylic acid. This gigantic study included the administration of these new drugs to 7,000 tuberculous veterans. Streptomycin conferences of physicians in the various veterans' hospitals were held regularly.

No drug was found which would destroy tubercle bacilli in human and animal tissues. However, para-aminosalicylic acid and the antibiotics—streptomycin and dihydrostreptomycin—have a bacteriostatic effect on these organisms. Thus they suppress the disease temporarily, especially in acquired lesions. The problem of tubercle bacilli becoming resistant to streptomycin was partially solved by alternating this drug with para-aminosalicylic acid. C. W. Tempel (Denver, Colo.) employed an intermittent dosage schedule by which tubercle bacilli acquired resistance to streptomycin much later than when the drug was administered daily.

Prevention.—Although no new substantial evidence accrued concerning value of methods used with the hope of providing immunity to tuberculosis, enthusiasm ran high in some parts of the world for the use of BCG (Bacillus-Calmette Guérin) and the vole tubercle bacillus vaccine. Headed largely by Danish workers through the World Health organization, governments of nations were solicited to sanction prophylactic vaccinations against tuberculosis with BCG of 15,000,000 children and young adults, mostly in Europe and Asia.

R. J. Dubos (New York city) in discussing the immunological aspects of BCG vaccinations stated that the development of a tuberculin reaction was being universally used as a criterion that the vaccine had "taken" but unfortunately the relation of tuberculin allergy to immunity remained one of the most obscure aspects of the pathogenesis of tuberculosis. He pointed out that the possibility that under certain conditions, injection of BCG might bring about a state of allergy without inducing immunity. E. M. Medlar (Sunmount, N.Y.) called attention to attempts to vaccinate cattle with BCG which were without beneficial effect. He stated that the program of mass vaccination with BCG did not touch the major source of tuberculosis, and that it appeared illogical to anticipate that artificial vaccination could succeed when natural vaccination has failed.

Domestic Animals.—In the fiscal year ended June 30, 1949, a total of 8,737,501 tuberculin tests were administered to cattle by the U.S. bureau of animal industry, disclosing 17,007 (0.19%) reactors. Of the 13,168,967 slaughtered, only 166 (0.0012%) of the carcasses had to be sterilized. Tuberculosis among cattle had been eradicated from large areas of the United States.

In Queensland, Austr., J. C. J. Maunder said the incidence of tuberculosis in dairy herds had been reduced from 15.8% to 0.92% over a period of four years by means of the single intradermal tuberculin test.

In England a bill to insure greater freedom of children's milk from the dangers of tuberculosis passed its second reading in the house of commons. Dr. Edith Summerskill said that 1,500 deaths had occurred each year from milk containing tubercle bacilli and many more thousands were crippled. G. S. Wilson stated that in the rural areas, the percentage of children infected was ten times greater because more milk was consumed there than in London. The number of attested herds had been doubled since 1944 and about 16% of the cows of England belonged to such herds.

Avian tuberculosis continued as a serious economic problem in several U.S. midwestern states.

Organizations.—The World Health organization established an expert committee on tuberculosis and a tuberculosis section. The second assembly was held in June 1949. All countries were invited to submit their requests for tuberculosis work with special reference to demonstrations in X-ray work, tuberculin testing, BCG, special forms of therapy and fellowships.

STUDENT NURSES at Albany hospital, N.Y., being vaccinated with BCG, a vaccine believed to build up immunity to tuberculosis in persons not already infected. First large-scale testing of BCG in the U.S. was carried out in 1949

Virginia Cameron reported that during 1947–48 nearly $7,000,000 was spent on research on tuberculosis in the United States. More than $4,000,000 was for studies on chemotherapy by various organizations. The medical research program of the National Tuberculosis association had been in operation for 27 years and investigators receiving grants had published more than 1,000 articles. Approximately 24 separate investigations in universities and research institutions were supported in 1949. In May the board of directors voted that beginning in 1950 1% of the gross income from seal sales would be allocated to the National Tuberculosis association research program. On the basis of the 1948 income from seals ($20,153,476.79) this would amount to approximately $200,000 annually. (*See* also EAR, NOSE AND THROAT, DISEASES OF; PSYCHOSOMATIC MEDICINE; X-RAY AND RADIOLOGY.)

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(J. A. MY.)

Tungsten: *see* MINERAL AND METAL PRODUCTION AND PRICES.
Tunisia: *see* FRENCH UNION.

Tunnels. Construction of tunnels for sewer, water supply, drainage, railroad and highway projects throughout the world was unusually active in 1949.

In the United States the twin-traffic tunnel between the Battery in Manhattan (New York city) and Brooklyn, N.Y., 1.2 mi. long, was expected to be completed and opened to traffic in 1950. At Pittsburgh, Pa., the twin-tube Squirrel hill traffic tunnels, 4,200 ft. long, were holed through, and were being lined with expectation of completion in 1950.

The Union Pacific railroad opened up its 6,700-ft. Aspen tunnel in Wyoming, eliminating the last single-track bottleneck on the main line between Omaha, Neb., and Ogden, Utah. In West Virginia the Norfolk and Western railroad completed two double-track tunnels, 7,000 ft. long, the largest in cross-section ever driven for railroad traffic.

On New York city's Delaware river water-supply system, the 6-mi. Neversink tunnel was approximately half finished, and the

25-mi. Downsville tunnel was begun; these bores when finished would convey water from the Delaware to the Hudson watershed to relieve the city's critical water shortage. In Baltimore, Md., the 7-mi. Montebello-Liberty road water tunnel was completed, and the 10-mi. Liberty road-Patapsco water tunnel was under construction. Boston, Mass., holed through its 5.5-mi. city tunnel; concrete lining was to be completed in 1950. Cleveland, O., finished a 1½-mi. intake tunnel, and Cincinnati, O., reported progress on its new small-bore water tunnel. The U.S. bureau of reclamation opened bids in Dec. 1949 for the first section of the 6½-mi. Tecolote tunnel near Santa Barbara, Calif.

The Pacific Gas and Electric company continued to make progress on its Feather river hydroelectric developments in California; two tunnels, one 26 ft. in diameter and 3.9 mi. long, the other 25 ft. in diameter and 6.6 mi. long, were to be completed in 1950. Los Angeles, Calif., started work on three long (5.1, 2.1 and 2.2 mi.) 10-ft. tunnels for new hydroelectric plants in its Owens valley water development.

In Latin America the Puerto Rico water resources authority was extending the Caonillas hydroelectric project by diverting three rivers, the upper Arecibo, Pellejas and Vivi, through four successive 7-ft. tunnels, 1.6, 2.0, 0.9 and 0.6 mi. long, respectively, into the Caonillas reservoir; all were started in 1949. In Chile the quarter-mile Angostura two-lane highway tunnel on the Pan-American highway south of Santiago was completed in August.

Lerma tunnel, 10-mi. bore and longest in Mexico, was holed through in 1949 and concrete lining was to be completed in 1950 to alleviate Mexico city's water shortage. In Brazil two large hydroelectric tunnels were being built by the Brazilian Traction, Light and Power company for its Barro do Pirai project in the state of Rio de Janeiro; they were the Santa Cecilia tunnel, 2 mi. long, and the Vigaria tunnel, ½ mi. long. An odd hydroelectric tunnel, 8 mi. long, was being driven for Empresas Electricas Asociadas e Hidrandina, inland from Lima, Peru. It was to be about 10 ft. in diameter for the first 6 mi., and 18 ft. in diameter for the last 2 mi., the larger size to be used for off-peak water storage to take care of peak electric loads.

There were numerous tunnel projects under way in Europe during 1949. In Italy 13 tunnels on 8 hydroelectric projects were under construction, the longest of these being the Piave di Cavore-Vaiont tunnel, 15 ft. in diameter and 11.7 mi. in length. The Acquedotto Romano del Peschiera water-supply project, under construction in 1949, included several tunnels, the longest being 49 mi.

In Germany two tunnels totalling 4.3 mi. were completed in Oct. 1949 on the Rissbach hydroelectric project in the Bavarian alps.

In England the British railways were driving the new Woodhead double-track tunnel between Manchester and Sheffield. The 11-ft. Bowland Forest tunnel, 10 mi. long, was under construction near Manchester as part of the city's new Haweswater water-supply line. Eleven hydroelectric tunnels were under construction in Switzerland. The only major tunnel under way in France during 1949 was the four-lane Croix-Rouse highway tunnel at Lyon, 39½ ft. in diameter and 1¼ mi. long. (H. W. RN.)

Turbojets and Turboprops: *see* JET PROPULSION.

Turkey.

A republic in the southeastern Balkans and Asia Minor, Turkey is bounded on the west by the Aegean sea, on the northwest by Greece and Bulgaria, on the north by the Black sea, on the northeast by the U.S.S.R., on the east by Iran and on the south by Iraq, Syria and the Mediterranean. Area: 296,185 sq.mi. (including 9,256 sq.mi. in Europe). Pop.: (1927 census) 13,648,270, (1945 census) 18,790,174, (June 1949 est.) 19,750,000. According to the 1945 census, European Turkey had 1,496,612 inhabitants (165 per sq.mi.) and Anatolia 17,293,562 (59 per sq.mi.). Languages (1935 census): Turkish 86.8%, Kurdish 9.3%, Arabic 0.9%, Greek 0.7%, Circassian 0.6%, Armenian 0.4%, Georgian 0.5%, others 0.8%. Turkey being a lay state no religion has primacy, although 97.7% of the population is Moslem. Other religions (1935 census): Christian 226,167 (Greek Orthodox 125,046, Gregorian Armenian 44,526, Roman Catholic 32,155, Catholic Armenian 11,229, Protestant 8,486, other Christian 4,725); Jewish 78,730. Chief towns (1945 census): Ankara (cap., 226,712); Istanbul (860,558); Izmir (Smyrna, 198,396); Adana (100,780); Bursa (85,919); Eskişehir (80,030). President of the republic in 1949: General Ismet Inönü; prime minister, Semsettin Günaltay.

History.—In 1949, once again January was marked by a political crisis in Turkey, when Hasan Saka tendered his resignation, his second cabinet thus coming to an end after seven months of political power. The president offered the premiership to Semsettin Günaltay. This selection came as a surprise, for the new premier was not widely known and had never held high office. He had, however, played an influential part within the Republican People's party, of the last general congress of which (in 1947) he had been chairman. He retained four members of the old government and his cabinet was regarded as a cross section of his party, marked by the inclusion of young men. His government was received by the press without enthusiasm and with prophecies of a short life; but by the end of 1949 the Günaltay cabinet had already enjoyed a longer life than its predecessor. Its program, opening with the assertion of continuity of the consistent policy of Turkey, proposed a reform of the electoral and press laws, neither of which met with any sympathy on the part of the opposition and party politics became sharper. A powerful weapon in the hands of the opposition was the fact that the president of the republic was at the same time a party man, being president general of the Republican People's party and the opinion was that he should divest himself of this political attribute. In June there was a shuffle in the cabinet but rumours of an impending resignation were falsified.

In the autumn a brief sensation was provoked by the announcement of a revolutionary plot, attributed to the National party, in which the president was to be murdered. This was clothed in such a fantastic atmosphere of contradictions that it was quickly dismissed and inquiry abandoned.

Foreign Relations.—In foreign affairs the policy of Turkey remained unchanged. It was based on the desire to develop a democracy on western lines, with friendship all around. Turkey sought no territory, but would not yield any of its own. On this line all its statesmen were firm. With the United States relations were most cordial, in view of the great contributions made by that country towards the development of Turkey, the construction of roads—its most vital requirement—the equipment of its agriculture and its fighting services on modern lines. A certain disappointment was felt that the North Atlantic treaty was not accompanied by a Mediterranean pact including Turkey. The Turks were resolved to play their full part in international movements in favour of peace and its representatives joined in August the ministerial committee and the consultative assembly of the Council of Europe at Strasbourg. (*See* EUROPEAN UNION.)

Turkey's relations with its neighbours were cordial or at least correct. Resentment against the U.S.S.R. was caused by the mysterious death—reported as suicide—in a train between Moscow and Batumi of Fuat Güzaltan, a former captain of the general staff, the Turkish diplomatic courier. The press regarded this as an assassination and matters were not improved when the U.S.S.R. submitted a bill for £T40,000 for the cost of the inquiry and return of the body.

Relations with Bulgaria were strained by several frontier incidents, such as the kidnapping of Turkish soldiers and peasants on the frontier and the explosion of a bomb at the Turkish consulate at Plovdiv. These were not mollified by the stories told by Turkish refugees of the ill-treatment of their kinsmen in Bulgaria.

Economics.—The year was economically a critical one for Turkey. Prolonged drought ended in a failure of the harvest and in places violent floods caused immense damage and loss of life. From being a substantial exporter of grain, Turkey was obliged to import great quantities of wheat from the United States, Canada and elsewhere. The failure of the corn crop in the northern provinces caused great distress and grave concern to the government.

The fish catches were also poor and a contractor who had agreed to provide the British government with preserved fish to the value of £500,000 was unable to fulfil his obligations. Further it was reported in the press that Turkey, a fish-exporting country, had actually imported preserved fish.

The devaluation of the pound sterling, though long rumoured, came as a bombshell in commercial circles. The government at once announced that the Turkish lira would not be devalued and the central bank quickly stated that the new rate of the Turkish lira to the pound sterling would be £T7.84 to 7.91 instead of £T11.28. (Exchange rate, Nov. 15, 1949, placed the lira at 35.71 U.S. cents.) Help from the United States continued on a moderate scale; the allocation to Turkey, proposed by the O.E.E.C. on Oct. 13, amounted to $59,000,000.

In foreign trade there was a great reduction in compensation business, to the satisfaction of those who saw in it the main cause for the fluctuation of prices. A marked feature was the revival of trade with western Germany. It should be remembered that before World War II Germany supplied 45% of Turkish imports and took 43% of Turkish exports.

Miscellaneous.—Laying the foundation stone of a new tuberculosis hospital at Ankara, the prime minister pointed out that a law had been passed to establish associations to fight consumption and expressed the hope that by 1959 the number of such hospitals would be doubled. It was the intention to set up a network of them over the country.

In education steady progress was being maintained and it was stated that in 1949 about a thousand new schools were opened. About 1,900 Turkish students were studying abroad.

Turkish civil aviation was successful. It held the record for the lowest rate of accidents. Whereas Turkish air lines carried 73,000 passengers in 1948, the 100,000 mark was passed in 1949. In 1948 the profit made was shown as £T3,000,000: in 1949 it was more than £T4,000,000.

Interest, not unmixed with irony, was roused by a private American expedition to search for the remains of Noah's ark on Mount Ararat. As this is a frontier district, the military authorities were concerned and it had some political repercussions: the U.S.S.R. would not credit it as a genuine scientific search and regarded it as an attempt at spying on their territory.

(Ma. B.)

Turkeys: *see* Livestock.

TVA: *see* Tennessee Valley Authority.

Twentieth Century Fund: *see* Societies and Associations.

Typhoid Fever: *see* Public Health Engineering.

Uganda: *see* British East Africa.

Ulcer: *see* Alimentary System, Disorders of.

Unemployment: *see* Census Data, U.S.; Employment.

Unemployment Insurance: *see* Social Security.

Unemployment Relief: *see* Relief.

U.N.E.S.C.O. (United Nations Educational, Scientific and Cultural Organization): *see* United Nations.

Unfederated Malay States: *see* Malaya (Federation of) and Singapore.

Union of American Republics: *see* Organization of American States.

Union of South Africa: *see* South Africa, The Union of.

Union of Soviet Socialist Republics.

The former Russian empire, a Eurasian state covering parts of eastern Europe and northern and central Asia, is a federation of soviet socialist republics. Area (Sept. 17, 1939): 8,173,557 sq.mi. Pop. (Jan. 17, 1939, census): 170,467,186. In 1939 the union consisted of 11 republics of which the Russian Soviet Federated Socialist Republic was by far the largest (78% of the whole territory and 64% of the population). Of the remaining 36% of the population, almost one-half lived in the Ukranian Soviet Socialist Republic (2% of the territory) and the other half in the nine other republics of the union. The U.S.S.R. is inhabited by almost 100 different nationalities speaking different languages. In Jan. 1939 Russians constituted 58.4% of the population, Ukrainians 16.6% and Byelorussians 3.1%. None of the other nationalities, all non-Slav and most of them non-Europeans, reached 3% of the total. The most important were Uzbeks 2.9%, Tatars 2.5%, Kazakhs 1.8%, Jews 1.8%, Azerbaijanis 1.3%, Georgians 1.3% and Armenians 1.3%.

In 1939 the U.S.S.R. consisted of the following republics:

	Capital	Area in sq. mi.	Population
Russian S.F.S.R.	Moscow	6,372,860	109,278,614
Ukrainian S.S.R.	Kiev	171,777	30,960,221
Byelorussian S.S.R.	Minsk	49,022	5,567,976
Georgian S.S.R.	Tiflis (Tbilisi)	27,020	3,542,289
Azerbaijan S.S.R.	Baku	33,196	3,209,727
Armenian S.S.R.	Erivan	11,580	1,281,599
Uzbek S.S.R	Tashkent	145,908	6,282,446
Kazakh S.S.R.	Alma-Ata	1,059,184	6,145,937
Kirghiz S.S.R.	Frunze	76,042	1,459,301
Tadzhik S.S.R.	Stalinabad	55,584	1,485,091
Turkmen S.S.R	Ashkhabad	171,384	1,253,985

Between 1939 and 1945 the U.S.S.R. considerably expanded its territory. In Europe the following areas were annexed:

	Area in sq. mi.	Population
Estonia	18,357	1,134,000
Latvia	25,395	1,994,500
Lithuania (including the Vilnius area)	25,173	3,032,000
From Finland	17,596	100,000*
From Poland (excluding the Vilnius area)	64,824	10,315,000
From Rumania (Bessarabia and N. Bukovina)	19,338	3,650,000
From Czechoslovakia (Subcarpathian Ruthenia)	4,856	725,400
From Germany (N.E. part of East Prussia)	5,096	830,000

*About 400,000 Karelians left in 1944 to resettle in Finland.

In Europe the territorial possessions of the U.S.S.R. had increased by 180,635 sq.mi., with a population of 21,780,900. From Japan the U.S.S.R. acquired Karafuto (southern Sakhalin), an area of 13,935 sq.mi. with a population of 331,900, and the Chishima or Kuril Islands (3,994 sq.mi.; pop. *c.* 90,000). In addition the formerly independent republic of Tannu Tuva (64,000 sq.mi.; *c.* 65,000) was annexed to the union.

As the result of this territorial expansion the U.S.S.R. after World War II formed a federation of 16 republics. The five new ones were: the Karelo-Finnish S.S.R. (cap. Petrozavodsk), consisting of the territory ceded by Finland and of the former autonomous soviet Karelia; the Moldavian S.S.R. (cap. Chisinau or Kishinev), consisting of most of Rumanian Bessarabia and the former autonomous soviet Moldavia; and Estonia (*q.v.*), Latvia (*q.v.*) and Lithuania (*q.v.*) transformed into soviet republics. Total *de facto* area: 8,436,121 sq.mi. Addi-

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WHO'S WHO IN RUSSIA TODAY
WHO'S WHO IN RUSSIA YESTERDAY
ALEXANDER

"THE LATEST EDITION," a 1949 cartoon by Alexander of the *Philadelphia Bulletin*

tion of the figures quoted above would give a total population of 192,735,000. The official estimate for 1940 was 193,000,000 (E. Davydov in *Bolshaya Sovietskaya Entsiklopedia: S.S.S.R.*, suppl. vol., Moscow, 1948). The only postwar estimate, published in *Pravda* of Jan. 23, 1946, by Gheorghy F. Alexandrov, then propaganda chief of the All-Union Communist party, gave the same figure. If this were correct, it would be necessary to assume that by 1946 Soviet war losses were compensated by the natural increase of population.

Chief towns (1939 census): Moscow (*q.v.*) (4,137,018); Leningrad (3,191,304); Kiev (846,293); Kharkov (833,432); Baku (809,347); Gorki, formerly Nizhni Novgorod (644,116); Odessa (604,223); Tashkent (585,005); Tiflis (519,175); Rostov-on-Don (510,253); Dnepropetrovsk (500,662). Chairman of the presidium of the supreme soviet of the U.S.S.R., Nikolai M. Shvernik; chairman of the council of ministers, Premier Joseph V. Stalin (*q.v.*).

History.—The year 1949 in the history of the U.S.S.R. was notable for events both in the external field and also in internal affairs such as the announcement concerning an atomic explosion on soviet territory which seemed to bear directly on the relations between the Soviet Union and other powers. As far as internal history was concerned, external observation could detect little that was new. It was generally assumed that, under much the same leadership as previously, the ideological, economic and administrative patterns of soviet society and government were being steadily consolidated with little to indicate the success or failure of such efforts beyond the somewhat controversial statistics about economic achievements that the soviet government from time to time put forth. Despite such events as the Congress of the Supporters of Peace which met in Moscow in August, there was still the minimum of contact between the peoples of the Soviet Union and those of the rest of the world, since the foreign delegates to such functions were chosen from those known in advance to be devoted to the soviet cause and the occasional visits abroad of soviet intellectuals were clearly also intended as methods of spreading propaganda rather than of genuine inquiry. The limitations upon the freedom of movement of members of the Moscow diplomatic corps; the continued evidence of the disfavour with which soviet citizens employed by, or having contacts with, foreigners were regarded by their own government; the small number of foreign journalists stationed in the Soviet Union; and even such a thing as the compulsory channeling of the exchange of books and periodicals through a department of the soviet foreign ministry—were all in the nature of supports for this policy of self-isolation. In view of this policy reports about disputes within the soviet hierarchy and matters connected with the eventual succession to the authority of Premier Joseph Stalin were rightly treated with total reserve by responsible commentators in other countries.

This self-isolation was however itself a part of a general attitude on the part of the soviet regime that explained its attitude to the various matters that arose in foreign affairs. One could sum it up by saying that during 1949 the object of the Soviet Union seemed to be to consolidate its hold over the eastern European countries which it dominated to the extent that this was possible without an armed breach with the western powers and without formally renouncing the principal foundations of the postwar settlement, the United Nations charter and the Potsdam agreement. To this primary object, other issues both political and economic appeared wholly subordinate.

Assimilation of People's Democracies.—In as far as the so-called satellite countries were concerned, the process of assimilation into the soviet system was carried on with little interference from the rest of the world. It took the form of combatting what appeared to be the most powerful forces opposing the process—religious organizations, in particular the Roman Catholic Church in Hungary, Poland and Czechoslovakia, and those elements which might seek to give local communism a nationalist twist in the form of an insufficient subordination of local matters to the total requirements of soviet planning. It also took the less spectacular form of continuing the transformation of the political and economic institutions of the so-called people's democracies into the single-party socialism of the Soviet Union itself. In each case, since the countries maintained a formal independence, it is proper to treat these issues as belonging to their own internal history; but for the sake of example one might point to Hungary (*q.v.*) as exemplifying all these tendencies. The trial of Joseph Cardinal Mindszenty in February marked one stage of the struggle, that of Laszlo Rajk in September, the other. In between, in August, a new constitution had been adopted, closely modelled on the 1936 soviet constitution. But for the fact that the collectivization of agriculture was still in the future, it could be argued that the final stage in such assimilation—the incorporation of Hungary within the Soviet Union—was not far off. Still more striking an evidence of the completeness of soviet control was provided by Poland (*q.v.*). It was there announced early in November that the Soviet Marshal K. K. Rokossovsky, a Pole by birth, had been released by the Soviet Union to act as commander in chief and minister of defense of Poland and had assumed Polish citizenship for the purpose. In face of such demonstrations of soviet power, there was little to be hoped for from western protests about the violations of human rights under the peace treaties to the three former German satellites or from the protest in November against the convening of a conference to carry out the decisions regarding Danubian navigation contained in the Belgrade convention of Aug. 18, 1948.

It was argued that some at least of the soviet intransigence where local Communist attitudes were concerned was due to the fear that the successful resistance of Marshal Tito to the economic and propaganda weapons of the Cominform might inspire emulation elsewhere. There was indeed no doubt but

Left: FIELD WORKERS of the Repetek Sand and Desert station in Turkmen, U.S.S.R., where problems of desert pastures and their distribution among collective and state farms were being studied in 1949

Right: MODEL OF A 26-story building to be the main structure on the campus of Lomonosov Moscow State university, displayed by A. V. Rudnev, one of a group of soviet architects honoured for its design. Scheduled for completion in 1951, it would be one of the tallest buildings in the U.S.S.R.

Left: MEMBERS OF THE YOUNG PIONEERS, the boys with shaved heads, the girls uniformly in pigtails, serving as flower-bearers, colour-bearers and trumpeters at the 1949 congress of the Komsomols in Moscow. Komsomols (Lenin Young Communist League of the Soviet Union) are the youth group next higher in age to the Young Pioneers

Right: TRADE SCHOOL STUDENTS getting practice in the turning shop of a soviet factory in 1949 that the Tito "heresy" was regarded with more aversion than outright capitalism, since the ideological foundation of the soviet position was that there could be no halfway house between total acceptance of the soviet lead and full participation in the alleged aggressive plans of the war-mongering Anglo-Saxon imperialists. The Soviet Union took, therefore, a full share in the increasing pressure brought upon Tito. (*See* also YUGOSLAVIA.)

Soviet Policy in Germany.—The course of events in Germany, where the year began with the Berlin air lift still in progress and with consequent tension between the Soviet Union and the western powers, was more complicated. After some rather oblique approaches from the soviet side, the foreign ministers eventually met again at the end of May and after a month of discussion sufficient agreement on the local issue was reached to permit the partial lifting of the soviet blockade and the gradual winding up of the air lift in the autumn. Nevertheless, the affairs of Berlin (*q.v.*) continued to add their quota of trouble to the international situation. On the other hand, in the second half of 1949, attention shifted to more general aspects of the German problem, with the soviet authorities still torn apparently between their fear of a revived German nationalism and their determination to make what they could out of their claims to be the real protagonists of German unity and of their contention that it was the western allies who were splitting the country. Matters were precipitated by the inauguration of the Bonn government in Western Germany; at the beginning of October the Russians countered this move by setting up a German People's Republic in the eastern zone. The form of the new regime was closely modelled on that of the other satellite countries and it had all the appurtenances of sovereignty including a foreign minister. But despite a message from Premier Stalin to Wilhelm Pieck, president of the new republic, in which the soviet leader referred to these events as "a turning point in the history of Europe," it rapidly became clear that the Russians were not proposing in the immediate future either to withdraw their troops or to hand over the levers of control. The appointment of a soviet diplomatic representative to the new government did not appear to diminish the importance of the position of Gen. Vasili I. Chuikov, transformed into the head of a control commission, nor of his political advisers, Ivan Semichastnov and Vladimir Semenov. The Russians appeared unwilling to do anything that might render more difficult contacts between their friends in eastern and in western Germany or to make impossible a resumption of four-power talks under the provisions of the Potsdam agreement which they continued to invoke. (*See* also GERMANY.)

Soviet Policy in China.—Outside Europe the most important area of soviet interest was China where the collapse of the main nationalist resistance led to sweeping advances by the Chinese Communist forces. The soviet government did not appear to wish to precipitate a crisis in this field, for instance by immediate insistence on the replacement of the Chinese delegation at U.N.; but all evidence pointed to a continued close connection between the Chinese Communists and the Russians. In October it was reported that large numbers of soviet technical staff had arrived in Peiping; and in as far as divisions of opinion among the Chinese Communist leaders could be detected, it was held that the prosoviet wing headed by Liu Shao-chi, secretary-general of the party, had clearly got the upper hand. It was he who made the keynote speech at the conference of Trade Unions of Asiatic and Australasian countries, held in Peiping in November, at which a permanent bureau was set up to perform it seemed, the functions of a Cominform for the far east. (*See* CHINA; COMMUNISM.)

Atomic Energy.—The difference between the soviet and the western approach to the control of atomic energy continued throughout the year. The matter was given a new complexion by the announcement from Washington, D.C., on Sept. 23 that the western governments had evidence of a recent atomic explosion in the Soviet Union. Official soviet comment on Sept. 25 was to the effect that much blasting work for peaceful purposes had recently been going on in Russia and that this might have attracted outside attention. On the other hand it was recalled that Vyacheslav M. Molotov had declared as long ago as Nov. 1947 that the atomic bomb was no longer a secret. Supporting the soviet proposal before the Atomic Energy commission of the United Nations for simultaneous conventions on prohibition and control, Andrei Y. Vishinsky declared in a speech on Nov. 10 that the Russians were using atomic energy not to stock-pile bombs but for peaceful purposes, for razing mountains and irrigating deserts. This statement was received with some scepticism by foreign experts. The soviet-licensed German press located the explosion at the Tingai Gates between the Urals and the Kazakh mountains.

Home Politics.—The structure of soviet government remained substantially intact, though a continuation was noticed of the previous tendency to merge into single ministries various specialized economic ministries that had been given independent existence as a part of the wartime production drive. The total number of ministries was thus reduced. More important seemed certain changes in personnel.

On March 4, Molotov was replaced as minister of foreign affairs by his deputy Vishinsky whose own place was taken by Andrei A. Gromyko, the permanent soviet delegate to the United Nations. At the same time as Molotov was replaced, the minister of foreign trade, Anastas I. Mikoyan was also replaced by his deputy Michael A. Menshikov. Since both Molotov and Mikoyan remained deputy prime ministers and members of the Politburo, the political significance of the changes

"JOE'S AMUSEMENT PARK: 'What I loses on the swings . . .,' " a cartoon by Illingworth, published in the May 4, 1949, issue of *Punch* (London) remained uncertain.

On the other hand, the dismissal on March 14 of Nikolai A. Voznesensky from his post as chairman of the State Planning commission, from his deputy premiership and from the Politburo was thought to imply his disgrace. He was succeeded in his two administrative capacities by Maxim Saburov. On the same day it was announced that Ivan Golyakov was replaced as president of the supreme court by Anatoli A. Volin.

On March 24 Marshal Nikolai A. Bulganin was replaced as minister of the armed forces by Marshal Alexander M. Vasilevsky whose place as first deputy minister was filled by Marshal Vasili D. Sokolovski.

The number of deputy prime ministers was raised to 13. They were: V. M. Molotov (first deputy prime minister), Andrei A. Andreyev, Marshal L. P. Beria, Marshal N. A. Bulganin, Lazar M. Kaganovich, A. N. Kosygin, Alexei Krutikov, Vyacheslav A. Malyshev, G. M. Malenkov, A. I. Mikoyan, Ivan Tevosyan, Marshal Klementy E. Voroshilov and Maxim Saburov.

After the dismissal of Voznesensky the 12 members of the Politburo were: Stalin, Andreyev, Beria, Bulganin, Kaganovich, Nikita S. Krushchev, Kosygin, Malenkov, Mikoyan, Molotov, N. M. Shvernik and Voroshilov.

In view of the importance attached to outward signs of the order of precedence within the top soviet hierarchy, some significance was attached to the choice of Georgi M. Malenkov to make the keynote speech in November at the celebrations of the anniversary of the revolution. Slightly before this the possibility of a further shake-up in the government was suggested by an attack in *Pravda* on the editorial board of the soviet trade union organ *Trud*, followed by a strongly worded attack on officials of the important ministry of labour reserves for falsifying accounts in an attempt to give a false picture of success. The criticism of *Trud* was the more remarkable in that in April the soviet trade unions had held their 10th congress—the first for 17 years.

In the first quarter of 1949, there were numerous congresses of the Communist parties of the constituent republics of the U.S.S.R. and of local party organizations. These did little more than restate the current themes of soviet propaganda but there was some suggestion that local nationalism was still regarded as a threat in both the Ukraine and Byelorussia. And later in the year there were reports of purges in the Communist parties of the Ukraine, Uzbekistan and Kazakhstan. Some internal divergences of opinion might also explain why the expected congress of the All-Union Communist party did not take place during the year—although there was no evidence as to the nature of the disagreements in question. In April, the 11th congress of the Young Communist league (Komsomol) was held and new rules for the organization were adopted, stress being laid on its responsibility for carrying out the decisions of the party and the government in the economic and cultural sphere.

Cultural Life.—There was no abatement in 1949 of the soviet claims that the Russians had been responsible for all the most important scientific achievements of the past and were also culturally the leading nation. Nor was there any slackening of pressure upon all forms of cultural activity to lend themselves wholeheartedly to the service of the regime and its economic social and political ends. Any tendency to look outside the U.S.S.R. for inspiration was branded as decadent cosmopolitanism. In the spring the *Literaturnaya Gazeta* published a denunciation of a large number of literary critics for indulging in this heresy. It was noted that almost all of the persons denounced either had Jewish surnames or had their former Jewish names given in brackets. This was unprecedented in the soviet press; and the anti-Semitic nature of the campaign was subsequently made clear in other ways. Foreign commentators were, however, prone to see in this less a cultural than a political manifestation, a fear lest soviet Jews might however mildly feel inclined to seek some kind of contact with the new state of Israel and thus expose themselves to foreign contamination. The measures against Zionism in the satellite countries and the frictions between the Israeli government and some of the people's democracies were witness to the same thing. Soviet patriotism seemed not merely to demand total allegiance but to emphasize its Russian character, rather than the multinational facets so much in evidence before World War II. (*See* also ATOMIC ENERGY; BULGARIA; COMMUNISM; FINLAND; MOSCOW; POLAND; RUMANIA; RUSSIAN LITERATURE; UNITED NATIONS.) (M. BF.)

Education.—Schools (1949): elementary and secondary, about 220,000, pupils, about 34,000,000; secondary technical schools, about 3,500, pupils, about 1,094,000; universities and other schools of higher education 837, students 770,000.

Finance.—Budget (1949 est.): revenue 446,000,000,000 roubles; expenditure 415,400,000,000 roubles. In Nov. 1949 the official rate of exchange was 5.30 roubles=$1 U.S.

Trade and Communications.—A. I. Mikoyan, former minister of foreign trade, stated on Dec. 21, 1949, that the volume of foreign trade in 1949 was more than double that of pre-World War II. He added that trade with the "capitalist countries" had decreased and amounted only to one-third of the total; and that trade with the people's democracies amounted to two-thirds of the total.

In 1940 railroads measured 105,300 km. By 1949 this had been increased considerably by new construction. Freight transported in 1940 was 415,000,000,000 tons-km. In 1949 there were 11,500 km. of all-weather motor roads. Motor vehicles in 1948 were estimated at 760,000. Water shipping (1948) totalled 1,299,300 gross tons. Air transport lines (1949) were 175,000 km.

Agriculture.—Crop production (1940, in metric tons): grain crops 119,000,000; sugar beets 21,800,000; potatoes 84,200,000; cotton 2,700,000. Livestock (1945; target for 1950 in parentheses): horses 10,500,000 (15,500,000); cattle 28,000,000 (32,500,000); pigs 10,400,000 (17,000,000); sheep and goats 69,400,000 (83,700,000). These figures do not include personal possessions of collective farmers, peasant households and other workers. These in April 1949 included 30,000,000 cattle, 7,200,000 pigs, 26,500,000 sheep and goats.

Industry.—The Central Statistical board pointed out that in the fourth quarter of 1949 the average monthly output of gross industrial production exceeded the 1940 level by 53%. Production estimates, 1948, with planned production for 1950 in parentheses, in metric tons, except where otherwise indicated: coal 200,000,000 (250,000,000); crude oil 29,100,000 (35,400,000); electricity 60,000,000,000 kw.hr. (82,000,000,000 kw.hr.); pig iron 15,000,000 (19,400,000); steel 18,300,000 (25,400,000). The Central Statistical board stated that the output of crude oil in the fourth quarter of 1949 had passed the level of the five-year plan for 1950.

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FILMS OF 1949.—*Symphony of Life* (Artkino Pictures, Inc.).

(K. SM.)

Unitarian Church.

The first postwar Congress of the International Association for Liberal Christianity and Religious Freedom (founded in 1900 at the 75th anniversary of the American Unitarian association) was held in Amsterdam, Netherlands, in July 1949 with 425 delegates from 22 European and American countries attending. The subject, "Message and Mission of Liberal Religion," was discussed in four sections dealing with theology, social problems, religious education and world religions. John Howland Lathrop of Brooklyn, N.Y., was succeeded as president by H. Stewart Carter of Cambridge, England. The next triennial congress was scheduled for 1952 in New York city.

A second important gathering was the biennial conference of the American Unitarian association in Portland, Ore., in August. The program centred around "The Challenge of the New Day" and the Unitarian answer derived from the twofold faith in the divinely creative potential in man and in what man can be. Practical programs for Unitarian effort resulted, and action was taken looking toward union with the Universalist Church. Commissions set up by both denominations submitted a joint resolution "concerning the association of self-governing congregations wishing to enlist in the extension of organized religion on the basis of local autonomy in matters of government and religious belief." If by June 1, 1950, 50% of the parish churches had voted affirmatively for union, the commissions would proceed with a specific plan. A still wider fellowship of churches based upon freedom of faith and congregational polity was foreseen as a result of the union of the two denominations.

A report submitted by the Interdenominational committee of the American Unitarian association, the Universalist Church of America and the American Ethical Union proposed a common action project. It recommended that this first project should be concerned with the problems of mental health on the three levels of education and survey, remedial action and application of principles of mental health to church life. The project was adopted for the following biennium.

A new high in legal membership in Unitarian churches was achieved in 1949, with the rate of growth the greatest in the history of the denomination. (*See* CHURCH MEMBERSHIP.)

(J. H. L.)

United Church of Canada.

The United Church of Canada which in 1925 united with the Presbyterian Church in Canada, the Methodist Church (Canada) and the Congregational Churches in Canada, reported for 1948 a membership of 791,677 with 1,861,683 persons under pastoral oversight, a Sunday school enrolment of 503,251 and 6,494 preaching places. The church owned property worth approximately $114,498,936 and raised a total of $20,672,466 for all purposes. The missionary and maintenance givings of the church in 1948 totalled $2,529,370, an increase of $402,848 over the previous year.

Among the important features in the life of the United Church during 1949 were the reception of 28,367 persons into membership on profession of faith, 58% of whom were adults, as a result of visitation evangelism undertaken largely by laymen; a vigorous campaign to secure recruits for the ministry; and the sending of more than $74,000 for relief to churches in Europe and in Asia.

The church was saddened by the loss of two former moderators: the Very Rev. Aubrey S. Tuttle, who was moderator from 1940 to 1942, and who gave distinguished leadership in the field of higher education and the Very Rev. J. R. P. Sclater, who had been taking a prominent lead in seeking to bring about ultimately organic union with the Church of England in Canada. Dr. Sclater was moderator from 1942 to 1944.

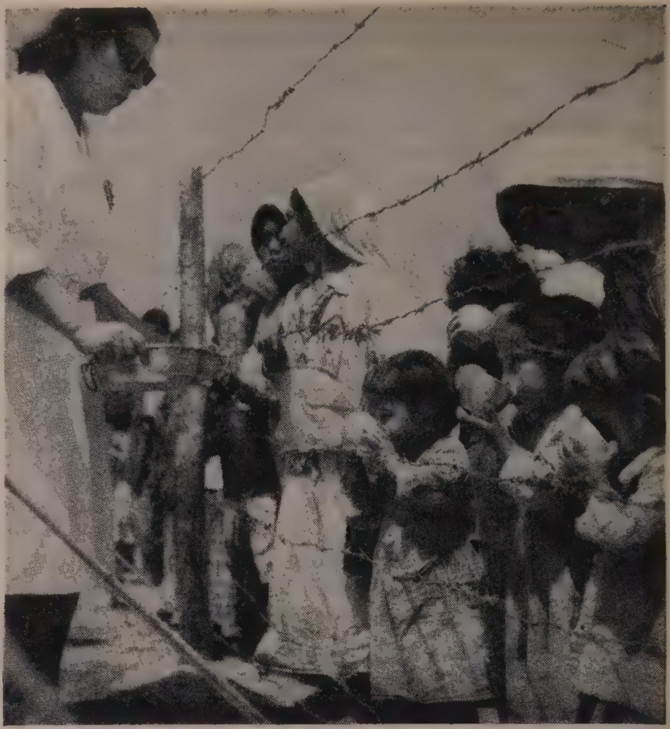
(G. A. SI.)

United Kingdom: *see* GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

United Nations.

During its fourth year, the United Nations continued to be handicapped by the lack of co-operation between the Soviet Union and the Western Powers. In addition to preventing the conclusion of treaties of peace with Germany and Japan, this circumstance prevented the Security council from functioning as the organ primarily responsible for the maintenance of international peace and security as the charter had anticipated. In addition, it slowed down and in some respects obstructed the work of other U.N. organs. Because of the flexibility of its organization and procedures, however, the U.N. and the specialized agencies were able to achieve important results in the areas of economic and social co-operation and the improvement of backward areas; even in the political field, notable successes were registered.

Membership.—Membership was increased during the year to 59 by the admission of Israel. At the close of 1949 membership was as follows: Afghanistan, Argentina, Australia, Belgium, Bolivia, Brazil, Burma, the Byelorussian Soviet Socialist Republic, Canada, Chile, China, Colombia, Costa Rica, Cuba, Czechoslovakia, Denmark, the Dominican Republic, Ecuador, Egypt, El Salvador, Ethiopia, France, Greece, Guatemala, Haiti, Honduras, Iceland, India, Iran, Iraq, Israel, Lebanon, Liberia, Luxembourg, Mexico, the Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Panamá, Paraguay, Peru, the Republic of the Philippines, Poland, Saudi Arabia, Siam, Sweden, Syria, Turkey, the Ukrainian Soviet Socialist Republic, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom, the United States of America, Uruguay, Venezuela, Yemen and Yugoslavia.


FOOD DISTRIBUTION to Arab women and children at a refugee camp in Palestine where daily food rations were provided in 1949 from funds allocated by the U.N. International Children's Emergency fund

New applications were received from the Republic of Korea (South Korea), Nepal and the Democratic People's Republic of Korea (North Korea). Favourable action by the Security council on the first two was prevented by the negative vote of the Soviet Union. The council refused to approve a soviet proposal to refer the application of the Democratic People's Republic of Korea to its Committee on the Admission of New Members. The Security council reconsidered the 12 applications which had previously failed of approval: *i.e.*, the applications of Albania, Austria, Bulgaria, Ceylon, Finland, Hungary, the Republic of Ireland, Italy, Mongolian People's Republic, Portugal, Rumania and Trans-Jordan (Jordan) but was unable to reach an affirmative decision on any of them. A soviet proposal to approve all 12 applications plus that of Nepal en bloc was defeated.

During the fourth session, the general assembly adopted resolutions requesting the Security council to reconsider the membership applications of Austria, Ceylon, Finland, the Republic of Ireland, Italy, Jordan, Republic of Korea, Portugal and Nepal. These nine had failed of approval because of the negative vote of the Soviet Union. The assembly also voted in its fourth session to request the International Court of Justice to give an advisory opinion on whether a state could become a member of the United Nations by vote of the general assembly without a favourable recommendation by the Security council. The permanent members of the Security council were urged to temper their use of the veto in considering applications for nembership. A soviet proposal that the general assembly recommend favourable reconsideration by the Security council of all pplications except the Korean was defeated although it had he support of 12 members.

The Principal Organs.—The general assembly met twice luring 1949. Because of failure to dispose in Paris of the items ppearing on the agenda of its third session, a second part of he third session was held at Lake Success, N.Y., from April 5 o May 18 with Herbert V. Evatt (Australia) continuing to erve as president. The fourth regular session of the general ssembly met at Lake Success from Sept. 20 to Dec. 10. Carlos P. Romulo (Republic of the Philippines) was elected president. The general assembly disposed of an agenda of 68 items, including many of pressing political, economic and social importance. t adopted the recommendations of a special committee for mproving its methods of work and rules of procedure. It voted he continuation of the United Nations Special Committee on he Balkans, the United Nations Commission on Korea and the nterim committee as subsidiary organs.

The Security council met less frequently during 1949 than in previous years. Though the charter requires that the Security council be so organized as to be able to function continuously, nd the provisional rules provide that the interval between neetings may not exceed 14 days, the failure of the permanent nembers to agree on questions brought before the council, and he consequent tendency to appeal to the general assembly when ossible, resulted in a decrease in council activity. During 1949 he Security council was composed of China, France, the Soviet Jnion, the United Kingdom and the United States (permanent nembers) and Argentina, Canada, Cuba, Egypt, Norway and the Jkraine (nonpermanent members). During its fourth session, he general assembly elected Ecuador, India and Yugoslavia for wo-year terms beginning Jan. 1, 1950, to succeed Argentina, Canada and the Ukraine. The election of Yugoslavia was bitterly pposed by the Soviet Union, who favoured the election of Czechoslovakia on the ground that it had become an established ule that one nonpermanent member should be a member nominated by the Soviet bloc.

The Economic and Social council held two sessions during 949, its eighth session held at Lake Success from Feb. 7 to March 18, and its ninth session held at Geneva, Switzerland, rom July 5 to August 15. James Thorn (New Zealand) was lected president at the beginning of the eighth session. During 949 the council was composed as follows: with terms ending Dec. 31, 1949—Byelorussia, Lebanon, New Zealand, Turkey, United States and Venezuela; with terms ending Dec. 31, 1950—Australia, Brazil, Denmark, Poland, the Soviet Union and the United States; and with terms expiring Dec. 31, 1951—Belgium, Chile, China, France, India and Peru.

During its fourth session the general assembly elected the ollowing to membership for three-year terms beginning Jan. 1, 950: Canada, Czechoslovakia, Mexico, Iran, Pakistan and the United States. In its two sessions, the council dealt with a great variety of subjects but centred its attention particularly on current economic trends, action to maintain and achieve full employment and economic stability, technical assistance to underdeveloped areas, and the co-ordination of the activities of pecialized agencies.

The Trusteeship council also held two sessions during 1949, ts fourth and fifth, both at Lake Success. The fourth session vas held from Jan. 24 to March 25 with Liu Chieh (China) erving as president. The fifth session was held from June 15 to July 22 with Roger Garreau (France) as president. The membership of the council during 1949 was as follows: members dministering trust territories—Australia, Belgium, France, New Zealand, United Kingdom and United States; members by virtue of permanent seats on the Security council—China and the Soviet Union; and members elected by the general assembly—Iraq and Mexico for three-year terms ending Dec. 31, 1949, and Costa Rica and the Republic of the Philippines for three-year terms ending Dec. 31, 1950. On Oct. 20, the general assembly elected Argentina and Iraq for three-year terms beginning Jan. 1, 1950, and also elected the Dominican Republic to serve the unexpired term of Costa Rica who had resigned. During 1949 the Trusteeship council made significant progress in developing its techniques of operation and standards of evaluation.

Maintenance of International Peace and Security.—The work of the United Nations in this field was handicapped by the state of relations between the Soviet Union and the Western Powers. This was particularly apparent when consideration was being given to the international control of atomic energy and the regulation of conventional armaments. Some notable achievements, however, were registered. Though the India-Pakistan question remained deadlocked and tension continued to exist in the Balkans, the U.N. could claim partial credit, at least, for the Indonesian settlement and the lifting of the Berlin blockade. and its intervention in Palestine had achieved the end of hostilities though the political dispute still remained unsettled.

The India-Pakistan question remained before the Security council for the whole year without any final settlement being reached. The United Nations Commission for India and Pakistan reported to the Security council on Jan. 13, 1949, that India and Pakistan had issued cease-fire orders on Jan. 1. This action was followed by the appointment on March 21 of Adm. Chester W. Nimitz (United States) as the U.N. administrator for the plebiscite in Jammu and Kashmir. The U.N. commission presented India and Pakistan with truce terms on April 28. On June 6 the commission announced that the proposals had not been accepted by either side. On June 10 the commission agreed to make a further effort to achieve a truce agreement. On July 8 both India and Pakistan accepted an invitation from the U.N. commission to hold a joint meeting of their military representatives at Karachi on July 18 in order to demarcate the cease-fire line. Agreement was reached on about 200 mi. of the cease-fire line in Kashmir, but the meeting adjourned to July 26 in order that the delegations might consult further with their governments. The U.N. commission reported at the end of the year that it had failed to end the dispute and suggested to the Security council that it be disbanded and that authority be vested in one person in an attempt to end the deadlock. Troops of both the Indian and Pakistan governments remained within Kashmir at the end of the year, thus preventing the plebiscite from being taken. (*See* also INDIA, DOMINION OF; PAKISTAN, DOMINION OF.)

The U.N. continued to deal with the Balkan situation throughout the year. The U.N. Special Committee on the Balkans sent a report to the secretary-general on March 4, in which it discussed the plight of the refugees from the civil war in Greece. The special committee continued to investigate allegations of frontier provocations. Early in the year Bulgaria made claims of provocation by Greek troops on Bulgarian territory, and Greece complained to the committee that Greek troops had been fired upon from Yugoslav territory. The general assembly during the second part of its third session set up a special conciliation committee, headed by Evatt, to facilitate agreement between Greece and Albania, Yugoslavia and Bulgaria, but the endeavour failed. The U.N. special committee, in a report to the general assembly covering the period from Oct. 1948 to July 1949, stated that Albania, Bulgaria and Yugoslavia had refused to recognize the committee, that Albania and Bulgaria had continued to give moral and material assistance to the Greek guerrilla movement, that aid from Yugoslavia which had been on a large scale early in the year was diminishing, and that the present situation constituted a threat to the political independence and territorial integrity of Greece and to peace in the Balkans. The committee submitted a supplementary report to the assembly on Sept. 16. The committee asked that the assembly again call on Albania and Bulgaria to cease giving aid to the Greek guerrillas and to find Albania primarily responsible for the threat to the peace in the Balkans. The committee also expressed concern at increasing support given the guerrillas by states not bordering upon Greece. The first committee of the general assembly voted unanimously on Sept. 29 to set up a conciliation committee to work out a settlement between Greece and its northern neighbours, the committee to consist of the president, the secretary-general and the chairman and vice-chairman of the first committee. The conciliation committee reported on Oct. 18 that it had failed to achieve an agreement. On recommendation of the First committee, the assembly adopted a resolution asking members to impose a complete arms embargo against Albania and Bulgaria as long as the two countries continued to give aid to the Greek guerrillas. The resolution also asked the two countries to desist from interference in Greece's internal affairs, continued the life of the special committee and asked it to continue observation of border incidents and attempt to seek a basis for conciliation. (*See* also GREECE.)

The Indonesian situation, at the stage of armed conflict between Netherlands and Indonesian forces at the beginning of 1949, seemed satisfactorily resolved by the end of the year. The Committee of Good Offices, established by the Security council on Aug. 25, 1947, reported on Jan. 7, 1949, that the Netherlands' orders for the end of hostilities in Java and Sumatra did not comply satisfactorily with the Security council's recommendation of Dec. 28, 1948. Dutch military action was subsequently severely criticized. A strongly worded resolution was passed on Jan. 28, asking that both sides immediately discontinue military operations, that the Netherlands release all political prisoners and return them to Djokjakarta, that negotiations be initiated to establish a federal government in Indonesia and that sovereignty be transferred to this government not later than July 1, 1950. The name of the Committee of Good Offices was changed to the United Nations Commission for Indonesia, and the powers of the commission were enlarged. The commission reported to the Security council on March 1 that no agreement had been reached and that this failure was due to a Netherlands refusal to comply with the resolution of Jan. 28. Subsequently, the council asked that the commission assist in helping Netherlands and Indonesian representatives reach agreement as soon as possible. The commission suggested that discussions be held in Batavia, and both sides agreed. On May 7 agreement was reached between the two parties on important issues including the cessation of hostilities and the return of the republican government to Djokjakarta. On July 6 the republic was restored to its former capital, Djokjakarta. On Aug. 3 both the Netherlands and the republic issued orders to end all hostilities. On Aug. 23 meetings began at The Hague to affect a transfer of sovereignty from the Netherlands to the Indonesian Republic. These meetings took the form of negotiations between the two countries and were not held directly under U.N. auspices. The round table discussions proved successful, and on Nov. 2 agreements were signed providing for the transfer of sovereignty over Indonesia to the Republic of the United States of Indonesia by Dec. 30, 1949. The general assembly adopted a resolution approving the agreement. Two similar resolutions failed to pass the Security council because of the negative vote of the Soviet Union. On Dec. 27, the Netherlands transferred full sovereignty over Indonesia to the Republic of the United States of Indonesia. (*See* also INDONESIA, REPUBLIC OF THE UNITED STATES OF; NETHERLANDS OVERSEAS TERRITORIES.)

The Korean situation remained substantially unimproved throughout 1949. The U.N. Commission on Korea, established by the general assembly to replace the Temporary Commission on Korea, held its first open meeting in Seoul on Feb. 12, 1949. The commission established two subcommittees, one to make contact with North Korea and the other to consult with the government of (South) Korea. In June the commission established another subcommittee to examine and report on the withdrawal of the remaining United States occupation forces. The last embarkations of U.S. troops occurred on June 29. The commission, through the secretary-general, asked the government of the Soviet Union to allow observance of the withdrawal of soviet troops from northern Korea. No answer was received either from officials in northern Korea or from the government of the Soviet Union in response to the commission's request to facilitate unification between north and south or to observe the withdrawal of troops. The commission, in a resolution adopted July 27, declared that the United States government and its commanding general no longer had any control over Korean security forces. A commission report adopted on July 28 set forth five main conclusions: (1) that propaganda and hostile activity between the two parts of Korea made unification remote; (2) that opposition of the Soviet Union to the commission and its objectives made a substantial degree of unification impossible; (3) that the differences between the Soviet Union and the United States remained one of the underlying factors in preventing unification; (4) that the Korean government should be allowed a broader political base; and (5) that the situation in Korea had not improved and that the commission had been unable to facilitate reaching the objectives of the general assembly. The general assembly on Oct. 21 voted to continue the United Nations Commission on Korea in being, rejecting a proposal by the Soviet Union to terminate the commission. The assembly widened the competence of the commission, giving it explicit instructions to be on guard against the outbreak of civil war in Korea. (*See* also KOREA.)

The Palestine situation remained one of continuous concern throughout the year. Primarily through the efforts of Acting Mediator Ralph J. Bunche, armistice agreements between Arabs and Jews were concluded early in the year. On Jan. 6 a cease-fire agreement between Israel and Egypt was signed, followed on Feb. 24 by an armistice agreement such as the Security council had requested in its resolutions of Nov. 4 and 16, 1948. On March 11 a cease-fire agreement between Israel and Trans-Jordan was signed. Armistice agreements between Lebanon and Israel and between Trans-Jordan and Israel were signed on March 23 and April 3, respectively. Negotiations between Israel and Syria began on April 5 and culminated in agreement on July 20, thus bringing hostilities in Palestine to an end. Bunche's final report was taken up by the Security council on Aug. 4. On Aug. 11 the council adopted a resolution declaring that the one-year truce had been superseded by the armistice agreements, relieving the acting mediator of further responsibility, reaffirming its unconditional cease-fire order and providing a nucleus of observer personnel.

The Palestine Conciliation commission, established by the general assembly on Dec. 11, 1948, convened in Geneva on Jan. 17, 1949, and established formal headquarters in Jerusalem on Jan. 24. The commission began discussions with Israel and the Arab countries in February. The commission later invited all the governments and delegations to Lausanne, Switzerland. This invitation was accepted, and the first meeting was held on April 27. It soon became obvious that deep-seated differences existed. The Israeli government was pressing for territorial negotiations, while the Arab governments insisted that negotia-

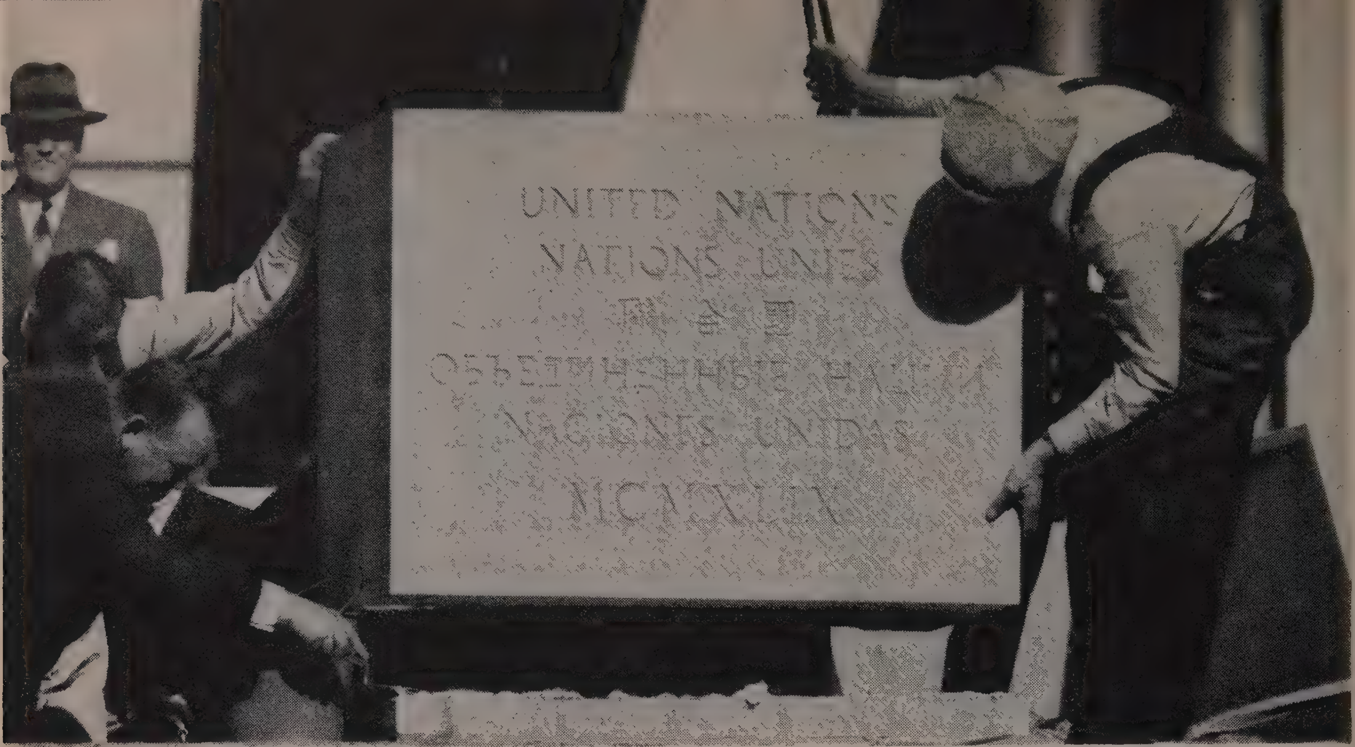
U.N.E.S.C.O.'s first simple clinic in Haiti, where about 200 people daily came for medical care in 1949, part of a U.N. pilot project in fundamental education. Haiti was selected because of its gross overpopulation and low level of literacy

tions regarding refugees should come first. The commission eventually set up an Economic Survey mission to aid the governments in overcoming economic dislocations. After a six-month study of the problem, the conciliation commission transmitted its recommendations to the general assembly on Sept. 1. These recommendations provided for the division of Jerusalem into a Jewish and an Arab zone, with specified functions performed by an international regime consisting of a U.N. commissioner, a general council, an international tribunal and a mixed tribunal. Jerusalem was to be permanently demilitarized and neutralized. The general assembly, however, refused to accept this recommendation, returning to the plan contained in its resolution of Nov. 29, 1947. By resolution of Dec. 10, the assembly reaffirmed the two principles that the city of Jerusalem should be established as a separate body under an international regime and that the Trusteeship council should be designated as administering authority. The resolution requested the Trusteeship council to complete the preparation of the statute. Both Israel and Jordan, the two states in actual occupation of the city, announced their unalterable opposition to the plan. (*See* also ISRAEL; JORDAN; PALESTINE.)

The Berlin dispute, brought before the Security council in 1948, was settled during the year, though not directly under United Nations auspices. Negotiations were initiated by representatives of the interested powers to the U.N., and the agreement that was eventually reached was undoubtedly facilitated by the opportunity for contacts which the U.N. affords. The committee of financial experts, nominated by the six "neutral" members of the council, and which had been appointed on Dec. 1, 1948, submitted a lengthy and confidential report on Feb. 11, 1949. The report was not made public until a month later and was never taken up by the Security council. The deadlock over Berlin was broken through informal conversations between Jacob A. Malik (Soviet Union) and Philip C. Jessup (United States) with other powers brought into the conversations after the initial two-power talks. On May 4 agreement was reached on all questions of principle. The agreement provided for the lifting of all restrictions which had been imposed by soviet authorities on communications, transport and trade between Berlin and western Germany. (*See* also BERLIN.)

The situation in China was brought to the attention of the United Nations when the Chinese nationalist government requested the general assembly in its fourth session to determine that the Soviet Union had violated the Sino-Soviet Treaty of Friendship and Alliance of Aug. 14, 1945, and the charter of the United Nations by giving aid to the Communists. After extended discussion, during which the right of the Chinese nationalist representative to speak for China was challenged, the general assembly on Dec. 8 adopted resolutions setting forth certain basic principles to be regarded as binding upon members in their relations with China and referred the whole matter to the Interim committee for further study. (*See* also CHINA.)

The question of the observance by Bulgaria, Hungary and Rumania of human rights and fundamental freedom guaranteed in the treaties of peace with these countries was first raised before the general assembly in the second part of its third session in connection with the trials of ecclesiastical dignitaries. At the fourth session the allegations were extended to include Rumania. In April the general assembly, expressing "deep concern," decided to retain the matter on its agenda for the fourth session



TRYGVE LIE (left), levelling cement for the laying of the cornerstone of the permanent headquarters of the United Nations in New York city, Oct. 24, 1949. Beneath the cornerstone was a receptacle containing historic documents including a copy of the U.N. charter

and invited the states parties to the peace treaties to use the procedures there provided. The governments of Bulgaria, Hungary and Rumania denied the accusations made in notes submitted by the United States and the United Kingdom and refused to appoint representatives on the commissions provided for by the treaties. In its fourth session, the general assembly adopted a resolution requesting the International Court of Justice to give an advisory opinion on questions relating to the interpretation of the treaty provisions in dispute.

The question of the treatment of people of Indian origin in the Union of South Africa was considered for the third time by the general assembly in the second part of its third session. In spite of strong objection by the Union of South Africa that this was a matter essentially within the domestic jurisdiction of that country, the general assembly adopted a resolution inviting the governments of India and South Africa, with the participation of Pakistan, to undertake a round table conference on the basis of the assembly's 1946 resolution. (*See* also SOUTH AFRICA, THE UNION OF.)

With respect to the questions of the international control of atomic energy and the limitation and reduction of conventional armaments, the stalemate existing at the close of 1948 continued throughout 1949. The Atomic Energy commission held six meetings between Feb. 18 and May 25 and then decided to refer the general assembly resolution of Nov. 1948 to its working committee for further consideration. The working committee decided that there was no useful purpose in continuing discussions and that its work should be suspended until the six permanent members had found a basis for agreement. On Aug. 9 the six permanent members of the commission began a series of meetings which failed to produce agreement. The general assembly later asked that these meetings continue, and in its resolution it again endorsed the majority control plan. (*See* ATOMIC ENERGY.)

With respect to conventional armaments, the Soviet Union introduced a proposal in the Security council in February that the Commission for Conventional Armaments elaborate a plan for the reduction by one-third of the armaments and armed forces of the permanent members of the Security council by June 1, 1949. The United States representative asked that the general assembly's resolution of 1948 be referred to the commission for action. The soviet resolution was rejected, and the United States proposal accepted. The French delegate to the working committee of the commission introduced a working paper on May 26 which contained proposals and recommendations for the census and verification of conventional armaments and armed forces. The working committee adopted the proposal on July 18, and on Aug. 1 the commission adopted the plan. A French proposal in the Security council that the commission's plan be accepted was defeated by the negative vote of the Soviet Union. Full information on the action taken was sent to the general assembly. The general assembly approved the commission's recommendations and requested the Security council to continue its study of the problem through the commission.

Development of International Law.—Under article 23 of the charter, the general assembly is made responsible for the development of international law. The International Law commission, established by resolution of the general assembly of Dec. 1946 to assist in this work, met for the first time in 1949. It was in session at Lake Success from April 12 to June 9. The commission prepared and adopted a Draft Declaration on the Rights and Duties of States; it considered and adopted a procedure for the further study of the principles of international law recognized in the charter and judgment of the Nuernberg tribunal; it gave preliminary consideration to the establishment of an international criminal court; and it provisionally selected certain topics for codification, giving priority to the law of treaties, arbitral procedure and the régime of the high seas. The general assembly, after receiving the commission's report, adopted resolutions urging the commission to include the regime of territorial waters in its list of priority subjects for codification and transmitting to members for comment the Draft Declaration on the Rights and Duties of States.

The development of international law was also advanced by the adoption by the general assembly of rules governing the calling of international conferences by the Economic and Social council, by the work of the general assembly, the Economic and Social council and its commissions and the secretariat in preparing draft agreements on various topics for submission to members and by the increased frequency of use of the International Court of Justice, either for advisory opinions or judgments. (For further details, *see* INTERNATIONAL LAW.)

Economic and Social Co-operation.—The most significant achievement of the U.N. during 1949 in the economic field was the adoption of a comprehensive plan for technical assistance to underdeveloped areas along the lines of Pres. Harry S. Truman's Point Four program. During its eighth session the Economic and Social council adopted a resolution requesting the secretary-general to prepare for the ninth session of the council a comprehensive program of U.N. technical assistance. Accordingly the secretary-general, in co-operation with the chief administrative officers of the specialized agencies, submitted a report on measures already devised to promote economic development in underdeveloped areas. There was also submitted a report, the result of co-operative action by the secretariats of the United Nations and eight specialized agencies, on an expanded program of technical assistance. The report outlined the administrative organization of such a program and estimated the expense of the first two years at $35,800,000 and $50,000,000, respectively. The objectives of the program were set forth to include the achievement by underdeveloped countries of the material and social benefits of a sound, balanced economic development. During its ninth session the Economic and Social council approved a program substantially along the lines of the secretary-general's report, except that a smaller initial expenditure was envisaged. The council's recommendations were adopted by the general assembly in its fourth session. As finally approved, the plan provided for the calling of a technical assistance conference for the purpose of negotiating contributions to the expanded program. It authorized the secretary-general to set up a special account for technical assistance to which governments were invited to contribute. It provided for the administration of the program by a technical assistance board composed of the executive heads of the United Nations and the participating specialized agencies, operating under the general direction of a standing technical assistance committee of the Economic and Social council. The plan provided for the distribution of funds initially available and laid down basic principles to govern the administration of technical aid.

In the social and humanitarian field, the U.N. registered important achievements. Following the recommendation of the Economic and Social council, the general assembly in its fourth session adopted a Convention for the Suppression of Traffic in Persons and of the Exploitation of the Prostitution of Others. Again, following out a suggestion contained in a memorandum prepared by the secretary-general at the request of the council, the general assembly voted to establish as of Jan. 1, 1951, a High Commissioner's Office for Refugees. The assembly also called upon members to make needed contributions to the International Children's Emergency fund. On the question of freedom of information, the general assembly adopted a resolution requesting all members to grant freedom of access to news personnel to attend U.N. meetings. It voted to postpone to its next session consideration of the Draft Convention on Freedom of Information.

Other activities during the year included a request by the Economic and Social council that the International Labour organization undertake a survey of forced labour and measures for its abolition, the affirmation by the council of the importance of ensuring trade union rights, decisions by the Commission on Narcotic Drugs initiating the drafting of a new single convention to simplify and improve existing international instruments for the control of narcotic drugs and progress by the Commission on Human Rights in drafting an International Covenant of Human Rights.

Specialized Agencies.—The following specialized agencies were in operation or in progress of formation in 1949:

International Labour Organization (I.L.O.).—*See* separate article.

Food and Agriculture Organization (F.A.O.).—*See* FOOD SUPPLY OF THE WORLD.

International Monetary Fund.—*See* separate article.

International Bank for Reconstruction and Development.—*See* separate article.

International Civil Aviation Organization (I.C.A.O.).—*See* AVIATION, CIVIL.

International Refugee Organization (I.R.O.).—*See* REFUGEES.

International Trade Organization (I.T.O.).—*See* TARIFFS.

United Nations Educational, Scientific and Cultural Organization (U.N.E.S.C.O.).—The fourth general conference was held at Paris, Sept. 19 to Oct. 5. In preparation of the program for 1950 three criteria were followed: practical importance for the betterment of the masses, the possibility of associating prominent intellectual and professional workers with the organization and the possibility of obtaining rapid results. The work of the organization during 1949 included educational and scientific aid to states that suffered during the war, educational aid to refugees, fundamental education projects, seminars, technical assistance to underdeveloped areas, cultural co-operative programs and the development of the use of mass media.

World Health Organization (W.H.O.).—The second World Health assembly met in Rome, Italy, from June 13 to July 2. It approved a regular budget of $7,873,000 and a supplementary budget of $9,152,250 to be raised on a voluntary basis. The program adopted by the assembly provided for the expansion and intensification of the activities of the organization, acting both independently and in co-operation with other international bodies. It gave special attention to possibilities of technical assistance to underdeveloped areas.

In line with the organization's policy of regionalism, regional meetings were held at New Delhi, India, Geneva, Switzerland, and Lima, Peru, so that delegates of southeast Asia, of the eastern Mediterranean and of the Americas could discuss health problems of their particular regions. Among the programs initiated in 1949 were: the survey of ways and means to deal with tuberculosis in ten eastern Mediterranean countries as well as in South America; long-term malaria control in India, Pakistan and Iran; and the promotion of penicillin output in eastern Europe. Practical services included: the sending of a venereal disease control demonstration team to India; medical services for the Arab refugees; supplies for Afghanistan to control a typhus outbreak; iron lungs for Bombay to relieve a polio epidemic; and aid to Ecuador following a disastrous earthquake.

International Telecommunications Union (I.T.U.).—Carrying out the decisions of its plenipotentiary conference at Atlantic City, N.J., in 1947, the International Telecommunication union during 1949 adapted its permanent organs to the structure decided upon at the conference and undertook through various means to bring some order into the use of radio frequencies.

Universal Postal Union (U.P.U.).—The Executive and Liaison committee held its 1949 session at Berne, Switzerland, from May 16 to May 25. F. Hess (Switzerland) was elected director of the bureau of the U.P.U. to succeed Alois Muri on Jan. 1, 1950.

World Meteorological Organization (W.M.O.).—The United States instrument of ratification of the convention establishing W.M.O. was deposited on May 4, 1949, the 17th to be deposited. The 30 ratifications required for the convention to enter into force had not been obtained by the end of the year.

Nonself-Governing Territories and Trusteeship Matters.—The fate of the Italian colonies was settled by the general assembly during 1949. During the second part of the third session, the general assembly attempted to find a solution, but without success. In the fourth session the recommendations of the First committee were adopted without change on Nov. 21. These recommendations called for the complete independence of Libya not later than Jan. 1, 1952, placed Italian Somaliland under trusteeship for ten years with Italy as the administering power and set up a commission to determine the wishes of the inhabitants of Eritrea and to report not later than June 1950. The assembly later approved Adrian Pelt, assistant secretary general for conferences and general services, as the U.N. commissioner to administer Libya until it would become independent on Jan. 1, 1952. On Dec. 9 the Trusteeship council established a special committee to draw up a trusteeship agreement for Italian Somaliland.

(*See* also ITALIAN COLONIAL EMPIRE.)

The question of the status of South-West Africa, formerly administered under League of Nations mandate by the Union of South Africa, was again brought before the general assembly as the result of the announcement by the Union government that it intended to establish a closer association between the Union and the former mandated territory and to discontinue sending reports to the U.N. on its administration. After extended consideration of the matter by its Fourth committee, the general assembly adopted two resolutions inviting the government of the Union of South Africa to resume the submission of reports and to comply with previous decisions of the general assembly, and requesting the International Court of Justice to give an opinion on the international status of South-West Africa. (*See* also SOUTH AFRICA, THE UNION OF.)

During 1949 information concerning over 60 nonself-governing territories was transmitted to the secretary-general and, after being summarized and analyzed by the Division of Information on Nonself-governing Territories, was studied by a special committee of the assembly. The committee met at Lake Success from Aug. 25 to Sept. 12, 1949. The report submitted by the special committee, including ten draft resolutions, led to vigorous debate in the fourth session of the general assembly. The position was taken by certain of the colonial powers that the permissive limits of the charter were being exceeded. Resolutions which the general assembly adopted recommended that members administering nonself-governing territories be invited to submit political information, that administering members give special attention to the improvement of education in territories under their control, that there be more effective co-operation with specialized international bodies in providing technical training facilities for natives, that the special committee be continued for three years and that the committee devote its attention each year to a special field, such as education. The representatives of Belgium, France and the United Kingdom strongly opposed certain of these resolutions and reserved their rights.

U.N. supervision of the administration of trust territories made substantial progress during the year. Following a new procedure suggested by the president of the council, reports to the council were presented by the special representatives of the administrative authorities, and members of the council submitted both written and oral questions. Following a general discussion of each report a Drafting Committee on Annual Reports, consisting of representatives of all council members, was appointed to prepare the council's report to the general assembly on the territory in question.

During its fourth and fifth sessions the Trusteeship council considered reports of the administering authorities on the administration of Western Samoa, the Cameroons (under both British and French administration), Togoland (under both British and French administration), Nauru, New Guinea and the Trust Territory of the Pacific Islands. The council also considered the report of its Visiting Mission to Trust Territories in East Africa and organized a Visiting Mission to Trust Territories in West Africa. Pursuant to a resolution adopted by the general assembly in its third session, it undertook the study of the question of administrative unions. A large number of petitions were considered, and some changes in petition procedure were adopted. In considering conditions in trust territories, the council was especially critical of the slow rate of political, economic and educational advancement and of the practice of combining trust territories with colonies in administrative unions.

The general assembly, on the basis of Trusteeship council reports and recommendations, adopted a series of resolutions reflecting a critical but constructive attitude toward the actual achievements of administering authorities. The assembly urged the more rapid advancement of trust territories toward self-government or independence, a greater participation of the indigenous population in various economic activities, greater progress in the elimination of uncivilized practices and in social improvement, improved educational facilities and the elimination of racial discrimination in education. The assembly also authorized further inquiry into the practice of administrative unions and recommended the use of the U.N. flag along with that of the administering authority. France and the United Kingdom reserved their positions on the methods of implementing these proposals. (For further information *see* TRUST TERRITORIES.)

General Administration and Finances.—The original 1950 budget estimates of the secretary-general called for gross expenditures of $44,314,398, which would have exceeded 1949 appropriations by more than $800,000. The Advisory Committee on Administrative and Budgetary Questions felt that a reduction of $1,786,750 could be made in the budget and so recommended to the assembly. The general assembly finally approved appropriations amounting to $49,641,773, including $8,000,000 for the international regime of Jerusalem. Miscellaneous income was estimated at $5,091,740.

In 1948, the general assembly had requested the Committee on Contributions to re-examine the existing scale of assessments. The committee concluded that since the world economic and financial situation could not be considered as having returned to normal, the time had not arrived for fixing a scale for a three-year period as contemplated in the general assembly's rules of procedure. The only adjustments proposed concerned the assessments of the United States and Sweden, which were reduced by 0.10% and 0.02% respectively.

The committee fixed the contribution of Israel, the only new member, at 0.12%.

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FILMS OF 1949.—*Searchlight on the Nations* (Films of the Nations); *This Is Their Story; United Nations Series* (4 films) (United Nations); *The World Is Rich* (Brandon Films Inc.).

(L. M. GH.)

United Nations War Crimes Commission: *see* WAR

United States.

The census bureau estimated that sometime after the middle of 1949 the population of the United States surpassed 150,000,000. Between April 1, 1940, and July 1, 1949, the population of the United States, excluding armed forces overseas, had increased by 12.9%. Eleven southeastern states in that period showed a net gain of 7.7%; Mississippi lost; Virginia and Florida gained substantially. California, Oregon and Washington showed a net gain of 54%. "In a most significant sense," according to one population expert, "the frontier has not yet disappeared, and new ones are being discovered in the Old South." The total area of continental United States is 3,022,387 sq.mi. (For population and area figures of the states, *see* the articles on the separate states. (*See* also BIRTH STATISTICS; CENSUS DATA, U.S.; CHURCH MEMBERSHIP; DEATH STATISTICS; IMMIGRATION AND EMIGRATION.)

Never had democracy been so clearly the basic interest of people of the U.S. as in 1949. Part of this interest was the result of the impact of totalitarianism from abroad. Part of it was the result of the criticism of the functioning of democracy, prevalent in the U.S. for a half century and brought to a head by pressing events at home as well as abroad. Part of it was due to the rise of defenders of democracy and the disagreement among themselves as to the means of preserving and improving upon the U.S. heritage. Defenders were legion. But most of all, this intense interest in democracy was expressed in the demonstration of democracy in action by customary full acceptance of the outcome of the presidential and congressional elections of 1948 and the appearance in Washington, D.C., in Jan. 1949 of a president with a program calling for definite advance in a program termed democratic. President Harry S. Truman's endorsement at the polls, and the election of a congress manifesting that same democratic outburst, seemed to indicate that in action—at home and abroad—the dominant political message would be the free will of a free people. The unexpected outcome of that election had seemed at the time to be the triumph of a man. But by the opening of the year 1949, events emphasized the outcome as an expression of the political power of many men and women.

President Truman's Program.—Upon taking office on Jan. 20, in an address broadcast by radio to every part of the nation, Pres. Harry S. Truman called for additional taxes to bring in an additional $4,000,000,000 of government revenue. Truman's program for labour included repeal of the Labor-Management (Taft-Hartley) act of 1947 and re-enactment of the Wagner act with improvements; reorganization of the department of labour; and the enactment of a minimum wage law requiring at least 75 cents an hour. For the farmer Truman asked for an improved national program to insure abundant agricultural production, parity of income for farmers through farm price supports and good utilization of land. To expand domestic markets for farm products and increase and stabilize foreign markets was a further aim of this program.

WHAT'S THE DIFFERENCE WHAT NATIONALITY HE IS—HE CAN PITCH!
JOHN Q PUBLIC
SHOEMAKER

"THE AMERICAN WAY," a cartoon by Vaughn Shoemaker of the *Chicago Daily News*, chosen in 1949 by the Freedom foundation as the cartoon which best promoted "the American way" during the year

To raise the standard of living of the U.S. people as a whole, the president asked for expansion of the social security program, with increase in the size of benefits and increased coverage against unemployment, old age, sickness and disability. To accomplish this, he proposed a system of prepaid medical insurance and remedy for the shortage of doctors, hospital facilities and nurses; federal financial aid to states to help them operate and maintain their school systems; the enactment of legislation for low-rent public housing, slum clearance, farm housing and housing research and encouragement of the building industry to produce lower priced housing by allocating materials in short supply and imposing price ceilings on such materials. Finally, the president called for enactment of the civil rights proposals he had made to the 80th congress.

The National Outlook.—The American people to whom the president addressed himself in Jan. 1949 comprised a nation in which belief in private enterprise was supported by private ownership of property in land and in industrial stocks; and by wide distribution of ownership of government bonds. It was a nation with a huge debt, estimated between $250,000,000,000 and $253,000,000,000, but with a rising national income which had reached $226,000,000,000 in 1948. Agricultural productivity was at an all-time high. While considerable loss of production had been caused in the previous year both indirectly and directly by strikes, especially in the coal mines and in east coast and west coast shipping and trucking, profits reaching an all-time high had continued to rise throughout 1948. Although income from most major sources had increased, the increase was offset by increase in consumer prices. Thus, there was no real gain in income. The American people nevertheless began the year 1949 with an increase in personal savings, for consumption expenditures had increased less than income. A larger proportion of these savings than formerly was invested in housing, unincorporated business and in farms rather than in liquid assets. Business investment was continuing at a high level. An average of more than 59,000,000 civilians were at work in the nation. (*See* BUDGET, NATIONAL; DEBT, NATIONAL; INCOME AND PRODUCT, U.S.)

As the year advanced, alert citizens observed the pressures of soviet Russia upon its satellites in eastern Europe; the rebellion of the independent Communist Tito in Yugoslavia. They were aroused by the trial and imprisonment of Joseph Cardinal Mindszenty, Roman Catholic primate of Hungary, which heralded open conflict between communism and a world-wide church. The apparent hardening of the will to dominate, evident in the soviet conduct of the blockade in Berlin, led to a growing belief in strong measures by the United States. The bipartisan approach to foreign policy, although under attack from a number of outstanding political figures, was maintained by the titular leaders of both parties in preparing for a hot war in order to keep the "cold war" cold.

The North Atlantic treaty (*q.v.*) was ratified by the senate in a vote of 82–13 on July 21. Shortly afterward President Truman submitted his proposal for a military assistance program, which on Sept. 22 came to its crucial test in the senate and was passed by a vote of 55–24 pledging $1,314,010,000. By October, spending under the Marshall plan went over the $7,000,000,000 mark. Meanwhile, the lifting of the Berlin blockade and the signing of the Bonn constitution signalized the revival of western Germany.

The menace of communism as a revolutionary force in the world outside the United States was made more vividly evident

"BR-R-R!" a cartoon by Barrow of the *Omaha World-Herald* lampooning Maj. Gen. Harry H. Vaughan, military aide to Pres. Truman. Gen. Vaughan was summoned to testify before a senate investigating subcommittee about his connection with certain "five-percenters," who aided businessmen to secure government contracts in return for fees or other substantial favours, including deep-freeze machines

to Americans by the announcement of President Truman on Sept. 23, the day after passage of the Arms Aid bill, that an atomic explosion had taken place in the Soviet Union. This was followed by a nation-wide debate as to the possibility of need of reshaping all plans not only for defense but also for participation in an open alliance having an aggressive program of attack. The extreme views were less evident after a month of debate. On the whole, it seemed that the basic alignment had not been changed by the announcement of possession by the U.S.S.R. of the means of making atomic weapons. Although the effect of the announcement was to devalue the power of the United States in the emotional reaction of its people, yet a new adaptation was made at the same time which seemed to increase belief that a general war was not near. That the U.S.S.R. had been contained in eastern Europe came to be generally acknowledged in the autumn.

Problems at Home.—Uneasiness caused by the menace of communism abroad was increased by the evidences of communism at home, shown notably in the trial of 11 Communist party leaders in the United States district court in New York city. This trial ended on Oct. 14, with a verdict of guilty of secretly teaching and advocating, on orders from Moscow, the overthrow and destruction of the government of the United States by force and violence. Although the defendants were conceded by the government an arguable point on appeal under the free speech amendment, the nine-month-long, carefully handled trial had presented overwhelming testimony to the incompatibility of Communist party activities with U.S. ideals.

The verdict in this case helped to resolve in the public mind the confusion caused by other trials, in particular the trials of Alger Hiss, former officer of the state department, accused by a confessed former Communist, Whittaker Chambers, of passing to soviet agents confidential state department documents. Because of the confidence in Hiss expressed by a number of men prominent in public life, these trials, more than spanning the year, were sensational and deeply disturbing to the public. In the public mind these trials were allied in purpose with the continued investigations of government employees suspected of disloyalty, the renewed attempt to deport Harry Bridges, leader of the International Longshoremen's union, through prosecution for perjury in denying that he was a Communist at the time he won U.S. citizenship, and the discharge of three faculty members from the state University of Washington, Seattle, on the basis of Communist convictions. (*See* also CIVIL LIBERTIES.)

The charge of Sen. Bourke Hickenlooper that Chairman David

Table I.—*Major Legislation Passed by U.S. Congress in 1949*

Act	House Vote	Senate Vote	Date of Enactment
Presidential Pay act (Increased president's salary to $100,000 a year and authorized total expense allowance of $90,000; increased salaries of vice-president and speaker of the house to $30,000)	Passed by voice vote	68 9 Yeas: D. 42, R. 26 Nays: D. 0, R. 9	Signed Jan. 19
Housing and Rent act of 1949 (Rent control extension to June 30, 1950. Authorized decontrol by states and municipalities; directed Federal Housing expediter to fix rents so that they would return a "fair net operating income")	263–143 Yeas: D. 196, R. 66, A.L. 1 Nays: D. 48, R. 95	78–11 Yeas: D. 52, R. 26 Nays: D. 0, R. 11	Signed March 30
Economic Cooperation act amendment, 1949 (Authorized appropriation of $5,430,000,000 for European Recovery program in period April 1, 1949–June 30, 1950)	Passed by voice vote	Passed by voice vote	Signed April 19
Reorganization Act of 1949 (Provided for submission of reorganization plans to congress by president, to take effect in 60 continuous-session days unless rejected by either house)	Passed by voice vote	Passed by voice vote	Signed June 20
Housing act of 1949 (Authorized long-range public housing, slum clearance and rural housing aid program)	227–186 Yeas: D. 192, R. 34, A.L. 1 Nays: D. 55, R. 131	57–13 Yeas: D. 33, R. 24 Nays: D. 2, R. 11	Signed July 15
Overtime-on-Overtime act (Eliminated extra pay for overtime as part of regular rate under Fair Labor Standards act) . . .	207–52 Yeas: 207 Nays: 52	Passed by voice vote	Signed July 20
North Atlantic treaty (Joined the U.S. in 20-year alliance with Canada, Great Britain and nine western European nations)		82–13 Yeas: D. 50, R. 32 Nays: D. 2, R. 11	Instrument of ratification signed July 25
National Security act amendments of 1949 (Placed defense establishment under executive control of secretary of defense; created post of chairman of joint chiefs of staff to co-ordinate work of that body)	356–7 Yeas: D. 216, R. 140 Nays: D. 2, R. 4, A.L. 1	Passed by voice vote	Signed Aug. 10
Trade Agreements Extension act of 1949 (Authorized the president (to June 12, 1951) to adjust U.S. tariffs in exchange for similar concessions by other nations)	319–69 Yeas: D. 234, R. 84, A.L. 1 Nays: D. 6, R. 63	62–19 Yeas: D. 47, R. 15 Nays: D. 1, R. 18	Signed Sept. 26
Mutual Defense Assistance Act of 1949 (Authorized appropriation of $1,314,010,000 for arms for North Atlantic pact members, and for Greece, Turkey, China, South Korea, Iran and the Philippines)	224–109 Yeas: D. 173, R. 51 Nays: D. 24, R. 84, A.L. 1	Passed by voice vote	Signed Oct. 6
Career Compensation act of 1949 (Provided increased pay and allowances for all members of the uniformed forces and reserve components thereof)	Passed by voice vote	Passed by voice vote	Signed Oct. 12
Government Officials Pay act (Raised salaries of cabinet members, other key officials and heads of executive agencies)	Passed by voice vote	52–14 Yeas: D. 37, R. 15 Nays: D. 0, R. 14	Signed Oct. 15
Fair Labor Standards amendments of 1949 (Raised legal minimum wage from 40 to 75 cents per hour; reduced coverage slightly)	131–19 Yeas: 131 Nays: 19	Passed by voice vote	Signed Oct. 26
Agriculture act of 1949 (Established long-range flexible price support program for farm commodities; assured high prices for six basic commodities in four-year transitory period). . . .	175–34 Yeas: 175 Nays: 34	46–7 Yeas: D. 27, R. 19 Nays: D. 0, R. 7	Signed Oct. 31
Classification act of 1949 (Provided pay increases for all classified federal employees and simplified compensation schedules)	Passed by voice vote	Passed by voice vote	Signed Oct. 28

Lilienthal of the Atomic Energy commission was guilty of "incredible mismanagement" produced long and exhaustive hearings before a joint congressional committee. At the close, the chairman was exonerated by a majority vote, but it was partisan in the continuance of doubt—either on political or practical grounds—on the part of Republican members. (*See* also ATOMIC ENERGY.)

The problems at home, quite apart from dealing with Communists in the United States, emphasized the fact that every domestic problem was in part a foreign problem. The pressure of organized labour for increased social security, the expansion of executive powers in the government, the increase of government controls—each of these focussed attention upon cost of government and upon taxation of citizens. There was no hope of reducing or of balancing a budget with such internal demands accompanying the steady increase of costs of defense and of carrying out the Marshall plan.

American Problems Abroad.—Close observers were sobered by the implications of the British devaluation of the pound sterling following the month-long negotiations in Washington in early autumn. The whole matter of world trade appeared again to be part of any stabilization of the world's uncertain economic situation. And this drove the argument as to world responsibility back into domestic politics. Upon this issue the party in power was prepared to take aggressive action, and won wide support from Republicans as well. It was surrender on the domestic front to an accomplished fact in international relations.

By the end of the year, the clearing union proposed by the Economic Cooperation administration (Marshall plan) was thought to be within sight, and some U.S. experts predicted that its realization would be a long step toward the convertibility of currencies. It was also thought that such a union might provide a practicable means of enabling Britain to go much further toward the "integration of her economy with those of the continent than has so far seemed to her to be possible or desirable." (*See* also EUROPEAN RECOVERY PROGRAM; ORGANIZATION FOR EUROPEAN ECONOMIC COOPERATION.)

The president, at the beginning of the year, had called for a "bold new" policy in undeveloped areas of the world, but little progress was made even with reference to Latin American countries. In the far east the year provided a record of retreat from former declarations, a defeat of U.S. interests and a loss of U.S. prestige. Whatever the explanation of the downfall of Chiang Kai-shek, it was clear that in the triumph of revolutionary forces under Communist leadership the United States had not only lost its favoured position in China, but also appeared to be weakening in its belief in its destiny to aid free people in the far east.

Domestic Politics.—The conflicts between president and congress as to specific measures resulted in a stalemate when congress adjourned in the autumn. This of course is not an unusual condition in United States politics. It was clear, however, despite attacks upon his appointees, opposition to his civil rights program and his call for increased taxes and criticism of his vacillating policies at critical moments, that the president ended the year in a stronger position on domestic issues than at the opening of congress. Both parties, as represented in congress, were seriously divided on every major issue. The Democratic party did not have a dependable majority. The southern Democratic revolt was stronger at the close than at the beginning. The president had made no major overtures at reconciliation and was still pressing his program of civil rights when congress adjourned.

Temporary attention was given certain local elections, although for the most part elections of the year were not significant. An exception was the defeat of John Foster Dulles in the race for a seat in the United States senate. New York's choice of Herbert Lehman, who had the active support of President Truman, seemed to some to indicate that the Fair Deal had succeeded the New Deal in the minds of the majority of the voters. Although Dulles had made a campaign of definite criticism of the policies of the Democrats, it did not seem to some observers probable that the campaign was a fair forerunner either of the elections of 1950 or of 1952. The small size of the total vote (4,928,646) and the unusual character of New York's floating vote supported this conclusion.

AIR VIEW of the inaugural parade for Pres. Truman and Vice-Pres. Barkley in Washington, D.C., Jan. 20, 1949. The presidential party is shown leaving the Capitol plaza surrounded by honour guards

As the year closed, gubernatorial aspirants for the elections of 1950 were much in discussion, notably in California, where, denouncing the two-party election of the incumbent Gov. Earl Warren, James Roosevelt opened a campaign for governor by outlining a program for a welfare state that was suggestive of the New Deal in its earlier phases and by committing himself to proposals that were reminiscent of the more extreme programs of the 1930s. (*See* also ELECTIONS.)

Discussion continued on the theme of so-called outworn political alignment, that is, Republican versus Democrat. The composition of party membership in the congress emphasized the divisions on party program; within the Democratic membership were wide divergences of belief, notably on the civil rights program and on other domestic proposals; within the Republican membership there was greater agreement on a domestic program, but none whatever on either temporary or fundamental questions in foreign relations. Consequently major legislation, when enacted, was by bipartisan vote, notably on the North Atlantic treaty, military aid to Europe, continuance of the

"HEY, FAT, YOU'RE NEXT," a cartoon by Pratt of the McClatchy Newspapers of California, published in 1949

Marshall plan for European recovery, and extension of reciprocal trade agreements. Nevertheless, when the party issue was drawn between candidates of the two parties, in elections before the people, the party lines tightened, notably in the New York senatorial election.

There was every indication as the year closed that the various divisions in the congress reflected actual divisions in the electorate and that, barring dramatic realignment caused by events beyond the borders of the country, the fundamental differences between the two great parties were to be more marked than at any time since 1932. Third parties were as unimportant in public thinking as at any time since the opening of the century. (*See* also DEMOCRATIC PARTY; REPUBLICAN PARTY.)

Congress.—A hard working congress in an unusually extended session, due to conflict with a determined president, accomplished five important objectives: (1) reaffirmation, by financial support amounting to more than $5,000,000,000 for the second year of the Marshall plan for economic aid to Europe; (2) ratification of the North Atlantic Security pact; (3) passage of the Reciprocal Trade Agreements act, restoring the full powers of the president to negotiate reciprocal trade agreements on the pattern successfully pursued by former Secretary of State Cordell Hull; (4) adoption of the National Housing act, a long range measure to obtain low rental public housing and slum clearance; (5) passage of a series of reorganization acts following the recommendations of the Commission on Organization of the Executive Branch of the Government (Hoover commission).

President Truman signed 792 measures enacted into law by his signature and vetoed 32 measures, including two by pocket veto. Congress spent about $34,400,000,000, having pared about $1,700,000,000 from the president's budget of a little more than $36,000,000,000.

Failure to act on the president's civil rights program appeared as the reflection of a southern Democratic-Republican coalition in this entire field of legislation. Failure to enact a new labour bill correcting some of the faults which experience had demonstrated in the existing Taft-Hartley act was attributable to the pressure of the administration for a dramatic repeal of the latter. The fact that congress failed to vote $4,000,000,000 in taxes called for by the president and yet voted a budget in which prospective expenditures would exceed prospective revenue, possibly by as much as $5,000,000,000, reaffirmed national deficit financing. The passage of a new farm bill which fixed farm-price supports hard and fast at the highest level ever reached in the history of this kind of legislation placed upon congress responsibility for greatly increasing the taxpayers' burden, placing the consumer at a disadvantage and disregarding the pledges given by both political parties in favour of a system of flexible supports. Minimum wage rates in the nation were raised by the 81st congress from 40 to 75 cents an hour. Legislation for federal subsidies to schools, much publicized in the exchange of views between Francis Cardinal Spellman and Mrs. Franklin D. Roosevelt; for creation of a department of public welfare; for compulsory national health insurance; and for the extension of social security—these, as well as the civil rights program, failed of passage.

Despite the vigour of the president's leadership congress showed throughout the year, and increasingly toward the end, an unusual independence. On Dec. 8 Sen. Harry F. Byrd (D.) of Virginia, long an opponent of the administration, issued his opposition budget which promised to be used as the weapon against the president and his advisers in finance.

Labour.—During a year of recurring crises in the country's international relations, organized labour continued its aggressive program for security and for increased wages. Outstanding was the campaign for the fourth round of wage increases since the end of the war. By the middle of July a stalemate was complete between the steelworkers and the steel companies. The federal fact-finding board on Sept. 10 recommended no increase in wages, but the payment of pensions and social insurance by management. This the unions accepted and management rejected. The steel workers went on strike in October, and by the end of the month won. The contracts which were then signed pointed the way for all industry on this issue.

In common with the mood of the rest of the nation, organized labour was engaged throughout the year in expelling known Communists and in reducing the powers of more radical unions. In December representatives of both the American Federation of Labor and the Congress of Industrial Organizations co-operated in founding an International Confederation of Free Trade Unions in London, Eng.

The rise of the power of organized labour in politics had never been more evident than in the year 1949. Its importance was clearly recognized by the president in his inaugural speech and again in his message to congress. The programs of both the American Federation of Labor and the Congress of Industrial Organizations for wage increases and for pension provisions were constantly in public discussion. The role of John L. Lewis, in his conferences on strikes and in his public utterances, was dramatically presented in newspaper and radio comment. The public was aware that no question in domestic legislation and no issue in politics was unaffected by the attitude or anticipated attitude of labour. Election figures indicated that the political power of labour in votes far transcended the membership in organized labour unions. In the congress the issue was drawn upon proposals, first, to repeal the Taft-Hartley law, and second, to amend it to the extent of making it workable. The heart of the discussion was on the injunction clause. The senate under the leadership of Sen. Robert A. Taft by a close vote modified the act, but the bill was buried in the house and came to no vote. The administration maintained its position demanding repeal and re-enactment of the Wagner act. The full intent of the leaders of organized labour was seen at the end of the year in the issuance of the call by the American Federation of Labor on its members to express their sentiments at the polls in punishing 107 "enemies of labour" in congress, almost all of them Republican. (*See* also LABOUR UNIONS; STRIKES.)

The Economic Situation at Home.—The economic decline experienced during the first half of the year was, in the view of leading business and labour leaders, only the natural and inevitable readjustment from the inflationary levels of 1948. According to the secretary of commerce, businessmen during the year had urged tax relief, in particular the elimination or reduction of wartime excise taxes, and measures to permit small businesses to retain a larger share of earnings as working capital. Increased sources of loans to meet the credit needs of small business were also called for.

The year ended with an estimated national income of $222,000,000,000, the small reduction of $4,000,000,000 from the 1948 level apparently reflecting price declines accompanying an increase in total production supply. Total salaries and wages were higher in 1949 than in 1948, both in dollars and in purchasing power. Earnings of corporations and of farm proprietors were lower, however, than in the record year of 1948. Declining prices of farm products, less urgent demand in foreign countries and heavy production following the bumper crops of 1948 accounted for the drop in farm income. Industrial production in general was moderately below 1948, but the automobile industry's output rose to a record of 6,000,000 cars and trucks. Construction, both public and private, topped the 1948 record by 3%.

Employment in 1949 averaged 58,500,000, or 2% less than in 1948. Unemployment, in a rising work force, rose to about 3,500,000, as compared with the minimum of 2,000,000 unemployed the previous year. In 1949 business discontinuances exceeded business beginnings by a small number for the first time since the end of the war.

Despite the seemingly favourable economic situation of the nation on the whole, there was much concern among businessmen, as well as in the Republican opposition, over the tendency of the government to interfere in the economy, whether by government spending and deficit financing in time of prosperity and theoretical peace, or by pledging high production prices and low consumer costs as in the Brannan farm plan. (*See* also BUSINESS REVIEW; EMPLOYMENT; INCOME AND PRODUCT, U.S.; PRICES.)

Foreign Policies.—The drain upon the U.S. economy for aid to western Europe brought results that, becoming unmistakably evident during the year, were heartening. The apparent success of the Marshall plan in stimulating economic recovery through restoring production exceeded expectation. It is significant that, while Marshall plan aid was helping to carry the continent through the difficulties of the postwar period, European unity was under discussion in late summer in the Council of Europe, the continent's first experimental parliament. (*See* EUROPEAN UNION.) Difficulties in the way of either economic or political unity in western Europe appeared formidable. Yet, as Winston Churchill said, "alternative to the success of a united Europe is a complete breakdown of European recovery after the American aid comes to an end; and that would be attended by a widespread misery, which is the soil from which communism springs and the sad diet on which it feeds." According to Paul G. Hoffman, Economic Cooperation administrator, "Unless western Europe with our help becomes economically healthy, politically stable and militarily strong and thus avoids falling into the Soviet orbit, the United States—even though we may avoid war

GEN. LUCIUS D. CLAY addressing a nation-wide radio audience on his return to the U.S. in May 1949, after more than two years of service as U.S. military governor in Germany. Immediately behind him are Secretary of State Dean Acheson (left) and Pres. Truman

—will have to become a garrison state."

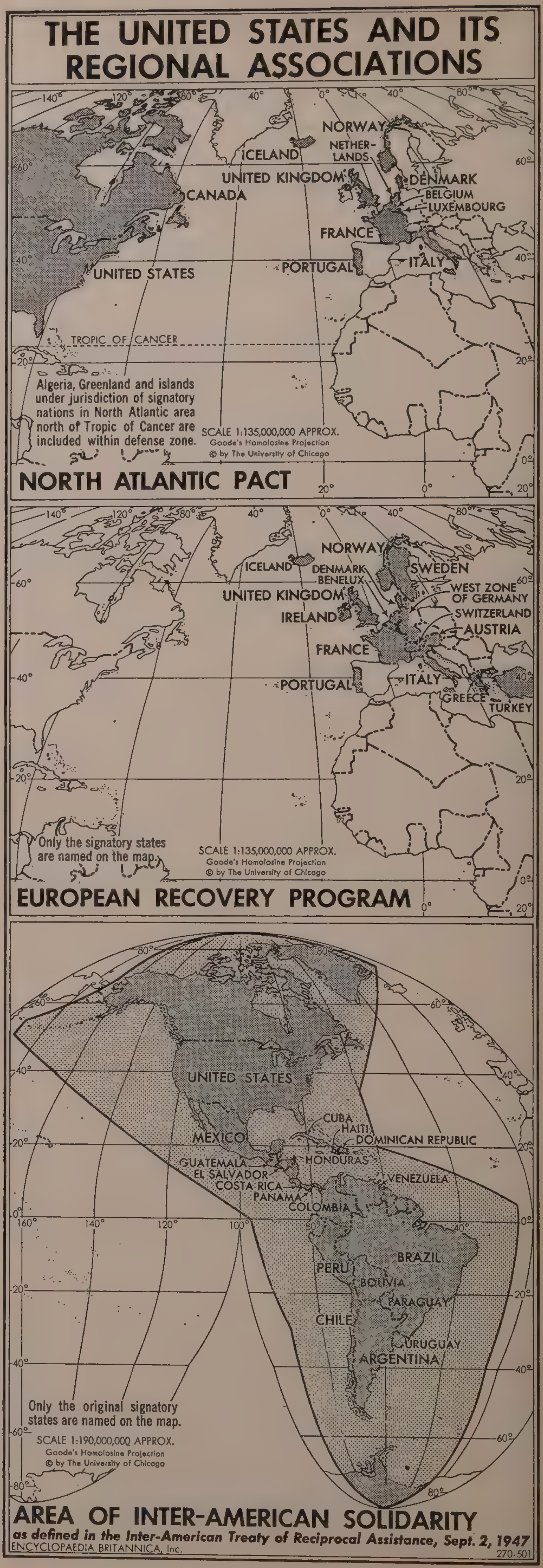
By the end of the year the integration of European economy was greatly advanced by the prospect of a clearing union, as previously noted. "Integration" Hoffman defined as "the formation of a single large market within which quantitative restrictions on the movement of goods, monetary barriers to the flow of payments and, eventually, all tariffs are permanently swept away."

Meanwhile, as the U.S.S.R. organized a satellite state in eastern Germany and as the Bonn government in western Germany gave reality, in the minds of western Europeans, to the prospect of a revived German nation, new obstacles to European unity appeared. Although the soviet sphere of influence had not widened in Europe in 1949; had diminished in the case of Yugoslavia; and had lost power of persuasion everywhere west of the "iron curtain," yet the atomic explosion in the Soviet Union, the purges in the eastern European satellites of the U.S.S.R. and the prospect of a Germany rising to seek unity at any price were matters of absorbing concern to Americans, as well as to Europeans, in the last quarter of the year.

In 1949 the United States had been more active in shaping world decisions than at any time in its history except during war, and to most Americans it seemed that both in Europe and in Asia these activities were being carried on in a world of war. Only the western hemisphere appeared to be at peace. Although majority public opinion had reversed its former stand on foreign policy in assuming economic and sometimes political leadership in western Europe, China and the far east were little comprehended. Aid had been reluctantly withdrawn from China by the middle of the year. United States interest in China was renewed as the spread of soviet influence in China proved to be inevitable. At the opening of the year, the nationalists still held at least half of China, and Americans, recalling earlier Chinese civil wars, of which they knew little, and their own experience in the U.S. Civil War, from which they drew unjustified analogies, saw a stalemate and a compromise between Communists and nationalists. But the complete collapse of Chiang Kai-shek in December and the journey of the Communist Mao Tse-tung to Moscow a few days later brought about final disillusionment in the United States. (*See* also CHINA.)

International Politics.—Thus was confirmed the conclusion which had been made clearer month by month that in the world there were now the Big Two. It had been given dramatic setting by the meetings of the Security council of the United Nations, and the fourth session of the general assembly. The physical presence of the United Nations was emphasized in October by the laying of the cornerstone of a permanent structure for its residence in New York city. Whatever the limitations of the United Nations in its obvious failures to settle questions outside a narrow field, the meeting of the assembly once more in the United States provided an unusual arena for the war of public opinion or of governmental opinion, as the case may be, of the nations of the world. It furnished, moreover, the most practical means of communication between the east and the west, that is, between the historical western democracies and governments under the influence of the Soviet Union. Efforts to make the United Nations an effective agency for peace were subject to the continuing conflict between two systems of society jockeying for position. That this manoeuvring could take place within an institutional framework was nevertheless evidence of a significant advance in a world political institution. (*See* also UNITED NATIONS.)

The year witnessed increasing appeals to public opinion on


THE UNITED STATES AND ITS REGIONAL ASSOCIATIONS
NORTH ATLANTIC PACT
NORWAY
NETHERLANDS
ICELAND
UNITED KINGDOM
DENMARK
BELGIUM
LUXEMBOURG
CANADA
FRANCE
PORTUGAL
ITALY
UNITED STATES
TROPIC OF CANCER
Algeria, Greenland and islands under jurisdiction of signatory nations in North Atlantic area north of Tropic of Cancer are included within defense zone.
SCALE 1:135,000,000 APPROX.
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EUROPEAN RECOVERY PROGRAM
NORWAY
SWEDEN
ICELAND
DENMARK
BENELUX
WEST ZONE OF GERMANY
UNITED KINGDOM
IRELAND
SWITZERLAND
AUSTRIA
FRANCE
PORTUGAL
ITALY
GREECE
TURKEY
Only the signatory states are named on the map.
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UNITED STATES
CUBA
HAITI
DOMINICAN REPUBLIC
MEXICO
GUATEMALA
HONDURAS
EL SALVADOR
COSTA RICA
PANAMA
VENEZUELA
COLOMBIA
PERU
BRAZIL
BOLIVIA
PARAGUAY
CHILE
URUGUAY
ARGENTINA
Only the original signatory states are named on the map.
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AREA OF INTER-AMERICAN SOLIDARITY
as defined in the Inter-American Treaty of Reciprocal Assistance, Sept. 2, 1947
ENCYCLOPAEDIA BRITANNICA, Inc.
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THE UNITED STATES and its regional associations. Adapted from a series of maps in the *New York Times* behalf of world government, federal union and additions to the United Nations. The work was done by nonpolitical agencies, although there was widespread support among members of the congress and in various state legislatures. A number of state legislatures pressed resolutions calling for constitutional amendment to make U.S. participation in world government possible. In the autumn a resolution was introduced in the senate calling upon President Truman to summon a conference of nations who had signed the North Atlantic treaty to consider a federal union. Twenty-two senators supported this proposal but no vote was taken. Early in 1950 hearings were to be held upon this proposal. (E. E. R.)

Foreign Credits of the U.S. Government.—The outstanding indebtedness of other countries to the U.S. government rose by less than one-tenth in the 15 months ended Sept. 30, 1949, as foreign aid increasingly took the form of gifts and other grants instead of loans and other credits calling for repayment of principal with interest. Thus in the 15-month period disbursements on loans and other credit utilizations of $1,200,000,000 represented less than one-sixth of total foreign aid of $7,700,000,000.

The increase in outstanding credits that did occur was almost wholly due to loans extended by the Economic Cooperation administration under the European Recovery program. In fact, outstanding loans of the Export-Import bank actually declined because repayments exceeded disbursements in the 15-month period.

Unutilized commitments declined by over one-third in the same period to $582,000,000, a low point for a number of years. There were in addition unutilized authorizations of $1,076,000,000, mainly the uncommitted lending authority of the Export-Import bank. This would actually become available for specific purposes only to the extent that new applications met the standards of that bank or of other lending agencies.

Most of the lending activity in the period occurred between Oct. 1948 and March 1949 and there were practically no disbursements by the July–Sept. 1949 quarter. On the basis of available data for the last quarter of the year, it was probable that the situation as of the year-end was substantially the same as that shown in Table II.

Countries participating in the European Recovery program accounted for 85% of the outstanding indebtedness on Sept. 30, 1949. Only two countries, United Kingdom and France, together were responsible for the bulk of the ERP total.

About one-sixth of unutilized credit commitments represented those of the Economic Cooperation administration available for the use of ERP countries. Unutilized commitments of the Export-Import bank were one-third of the total, but very little more than one-tenth of these were designated for ERP countries.

Collections of principal and interest increased as compared with earlier years, to aggregate over $600,000,000 in the 15 months. This included a large repayment made by Canada in advance of the due date. On the other hand, reported defaults were inconsequential. Approximately two-thirds of total collections was reported by the Export-Import bank. A substantial part of the total debt, including almost all of that owed by the United Kingdom, did not call for any repayments in this period. By 1952, however, the entire United Kingdom debt, as well as almost all others, would require regular payments of principal and interest, and annual debt service would exceed $500,000,000. According to the terms of some credit agreements certain payments could be deferred under stated conditions.

The most notable development in the year was the almost complete utilization of the $1,000,000,000 authorized by congress in April 1948 for loans and guarantees in the first year of

Table II.—*Foreign Credits of the U.S. Government—by Agency and by Country, as of Sept. 30, 1949*

	Total	Outstanding	Unutilized commitments and authorizations
Total	$11,526,486,258	$9,868,223,033	$1,658,263,225
Commitments	10,450,390,669	9,868,223,033	582,167,636
Uncommitted authority	1,076,095,589		1,076,095,589
By agency:			
Army department	170,000,000	40,439,147	129,560,853
Commitments	50,000,000	40,439,147	9,560,853
Uncommitted authority	120,000,000		120,000,000
Economic Cooperation administration	973,300,000	870,699,249	102,600,751
Export-Import bank:	3,506,000,001	2,167,654,442	1,338,345,559
Commitments	2,549,904,412	2,167,654,442	382,249,970
Uncommitted authority	956,095,589		956,095,589
General Services administration (War Assets admin.)	17,418,996	17,418,996	
Maritime commission	198,120,975	198,120,975	
Reconstruction Finance Corp.	216,184,754	181,184,754	35,000,000
State Department: United Nations headquarters loan	65,000,000	18,014,935	46,985,065
Treasury department:	6,380,461,532	6,374,690,535	5,770,997
British loan	3,750,000,000	3,750,000,000	
Lend-lease silver	291,215,173	291,215,173	
Other lend-lease	1,299,437,546	1,293,666,549	5,770,997
Surplus property	1,039,800,631	1,039,800,631	
Other	8,182	8,182	
By country:			
American republics	510,522,695	393,360,444	117,162,251
Argentina	184,307	184,307	
Bolivia	19,756,816	19,686,816	70,000
Brazil	126,531,294	119,352,041	7,179,253
Chile	75,294,643	51,545,010	23,749,633
Colombia	41,415,352	21,584,154	19,831,198
Costa Rica	6,577,282	6,577,282	
Cuba	10,566,750	10,566,750	
Dominican Republic	446,909	446,909	
Ecuador	17,773,218	10,721,318	7,051,900
Haiti	9,481,423	5,481,423	4,000,000
Honduras	427,015	427,015	
Mexico	107,516,971	76,337,631	31,179,340
Nicaragua	1,608,500	1,608,500	
Panamá	2,000,000	479,125	1,520,875
Paraguay	4,043,950	4,043,950	
Peru	4,385,403	4,385,403	
Salvador	1,000,964	1,000,964	
Uruguay	15,573,980	15,287,193	286,787
Venezuela	6,301,197	3,612,635	2,688,562
Unclassified	59,636,721	40,032,018	19,604,703
Austria	24,479,424	23,301,610	1,177,814
Belgium and Luxembourg	206,833,074	198,233,074	8,600,000
Commonwealth of Nations	5,090,305,617	5,050,305,617	40,000,000
United Kingdom	4,884,799,472	4,849,799,472	35,000,000
Australia	15,195,250	15,195,250	
Canada	10,967,025	5,967,025	5,000,000
India	173,839,570	173,839,570	
New Zealand	4,207,732	4,207,732	
Union of South Africa	1,296,568	1,296,568	
Burma	5,000,022	5,000,022	
China	186,223,458	170,376,838	15,846,620
Czechoslovakia	7,632,479	7,632,479	
Denmark	51,994,439	51,994,439	
Egypt	7,100,000	5,657,004	1,442,996
Ethiopia	7,467,438	5,217,438	2,250,000
Finland	130,775,777	123,880,360	6,895,417
France	2,054,136,455	2,054,136,455	
Germany	84,076,468	84,076,468	
Greece	100,926,748	100,926,748	
Hungary	14,318,830	14,318,830	
Iceland	2,386,758	2,386,758	
Iran	27,463,125	27,463,125	
Ireland	89,000,000	51,318,083	37,681,917
Israel	100,000,000	1,064,959	98,935,041
Italy	375,717,105	343,861,267	31,855,838
Japan	70,034,717	40,558,425	29,476,292
Korea	24,927,596	24,927,596	
Lebanon	598,274	598,274	
Liberia	24,667,612	16,636,582	8,031,030
Netherlands and possession	509,587,458	509,587,458	
Netherlands	447,268,133	447,268,133	
Indonesia	62,319,325	62,319,325	
Norway	108,601,172	108,601,172	
Philippines	65,674,854	65,424,854	250,000
Poland	79,992,245	79,832,860	159,385
Portuguese possession: Angola	31,505	31,505	
Saudi Arabia	25,702,993	25,702,993	
Sweden	25,773,653	3,773,653	22,000,000
Thailand	5,770,934	5,770,934	
Turkey	79,208,105	31,433,071	47,775,034
U.S.S.R.	223,656,670	221,916,703	1,739,967
Yugoslavia	20,900,000	900,000	20,000,000
International organization United Nations hdqtr. loan	65,000,000	18,014,935	46,985,065
Unclassified areas	43,902,969		43,902,969
Europe—special cotton credit	38,402,969		38,402,969
Various countries	5,500,000		5,500,000
Uncommitted lending authority	1,076,095,589		1,076,095,589
Export-Import bank	956,095,589		956,095,589
Army	120,000,000		120,000,000

Source: Clearing Office for Foreign Transactions, Department of Commerce.

the European Recovery program. In Oct. 1949 congress authorized an additional $150,000,000 for loans in the second year of the program, representing a much smaller proportion of the total amount authorized for aid. Also significant, though less sizable in amount, were the initial disbursement of $20,000,000 by the department of the army from the revolving fund of $150,000,000 for financing the purchase of natural fibres and their processing in occupied areas, and of $18,000,000 by the state department of the total of $65,000,000 interest-free loan for financing the United Nations headquarters in New York city. Other programs, such as the credit sales of surplus property, including merchant ships, were virtually brought to a close within the year. (R. C. Pe.)

"RIDERLESS HORSE," a cartoon by Illingworth of the *Daily Mail* (London), published in Feb. 1949. The North Atlantic treaty was not ratified by the U.S. senate until July 21, 1949

Education.—*See* the articles Education; Universities and Colleges.

Defense.—For information about the armed forces of the United States in 1949, *see* Armies of the World; Aviation, Military; Coast Guard, U.S.; Marine Corps, U.S.; National Guard; Navies of the World.

Foreign Trade.—*See* the articles Business Review; Export-Import Bank of Washington; International Bank for Reconstruction and Development; International Monetary Fund; International Trade; Tariffs.

Communications.—For statistics, *see* the articles Aviation, Civil; Canals and Inland Waterways; Electric Transportation; Motor Transportation; Post Office; Radio; Railroads; Roads and Highways; Shipbuilding; Shipping, Merchant Marine; Telegraphy; Telephone; Television.

Agriculture.—Statistical material pertaining to this subject may be found under Agriculture; Food Supply of the World; also in separate articles on the principal crops and agricultural products.

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(E. E. R.)

United States Government Departments and Bureaus: *see* Government Departments and Bureaus. Also *see* under specific name, *i.e.,* Coast Guard, U.S., etc.

United States Investments Abroad: *see* Foreign Investments.

United States Mint: *see* Coinage.

Universities and Colleges.

The following nine pages carry a selected list of nationally or regionally accredited universities, colleges, junior colleges and technical schools of college grade in the U.S., its possessions and Canada, with location, year founded, chief executive, enrolment, size of faculty, endowment and number of library volumes, for the academic year 1949–50.

The symbol * denotes 1948–49 data; || denotes data previous to 1948–49. (*See* also Education.)

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
A							
Acadia University, Wolfville, N.S., Can.	1838	Watson Kirkconnell	737	151	59	$ 1,145,000	87,000
Adams State Col., Alamosa, Colo.	1921	Ira Richardson	427	138	40	—	27,366
Adelphi College, Garden City, N. Y.	1896	Paul D. Eddy	2,350	600	161	805,979	48,728
Agnes Scott College, Decatur, Ga.	1889	James R. McCain	515	6	69	3,100,000	58,000
Akron, University of, Akron, Ohio	1870	H. E. Simmons	4,628	1,603	287	135,886	79,137
Alabama, University of, University, Ala.	1831	John M. Gallalee	8,291	3,487	854	6,660,000	350,000
Alabama A. and M. College, Normal, Ala.	1875	Joseph F. Drake	1,041	336	58	—	15,521
Alabama College, Montevallo, Ala.	1896	John T. Caldwell	710	—	72	669,605	57,245
Alabama Polytechnic Inst., Auburn, Ala.	1872	Ralph B. Draughon	7,230	3,157	485	912,306	140,000
Alabama State Tch. Col., Florence, Ala.	1873	Ethelbert B. Norton	1,387	401	75	—	54,085
Alabama State Tch. Col., Jacksonville, Ala.	1883	Houston Cole	1,378	446	51	—	21,798
Alabama State Tch. Col., Livingston, Ala.	1835	W. W. Hill	800	141	41	—	26,342
*Alabama State Tch. Col., Montgomery, Ala.	1874	H. Councill Trenholm	1,935	465	78	—	14,472
Alabama State Tch. Col., Troy, Ala.	1887	C. B. Smith	972	347	55	—	31,744
Alaska, University of, College, Alaska	1917	Terris Moore	330	124	43	1,000	25,000
Albany State College, Albany, Ga.	1903	Aaron Brown	670	68	60	—	15,000
Alberta, Univ. of, Edmonton, Alta., Can.	1906	Robert Newton	4,202	1,341	223	990,291	126,800
Albertus Magnus Col., New Haven, Conn.	1925	Sister M. Coralita	216	—	36	7,000	30,000
Albion College, Albion, Mich.	1835	W. W. Whitehouse	1,332	283	76	3,642,841	70,365
Albright College, Reading, Pa.	1856	Harry V. Masters	767	295	48	719,649	32,731
Alcorn A. and M. College, Alcorn, Miss.	1871	J. R. Otis	1,028	413	47	209,871	19,040
Alfred University, Alfred, N.Y.	1836	M. Ellis Drake	1,021	390	98	1,074,000	69,414
Allegheny College, Meadville, Pa.	1815	Louis T. Benezet	1,123	212	80	2,003,443	87,937
*Allen University, Columbia, S.C	1870	Samuel R. Higgins	799	201	40	—	15,000
Alliance Col., Cambridge Springs, Pa.	1912	John A. Jadus	242	100	20	—	14,200
Alma College, Alma, Mich.	1886	Dale D. Welch	607	191	39	537,173	53,225
Alverno College, Milwaukee, Wis.	1936	Sister M. Augustine	441	1	27	—	23,428
Amarillo College (Jr.), Amarillo, Tex.	1929	A. M. Meyer	643	73	39	—	12,000
American Int. Col., Springfield, Mass.	1885	J. Homer Miller	1,375	725	45	250,000	25,000
American University, Washington, D.C.	1893	Paul F. Douglass	4,245	2,065	265	852.002	141,504
Amherst College, Amherst, Mass.	1821	Charles W. Cole	1,220	232	109	14,824,433	275,280
Anderson College, Anderson, Ind.	1917	John A. Morrison	807	282	54	35,000	20,000
Andrew College (Jr.), Cuthbert, Ga.	1854	S. C. Olliff	105	—	12	500,000	6,500
Antioch College, Yellow Springs, Ohio	1853	Douglas McGregor	1,100	250	75	2,738,000	74,240
Appalachian State Tch. Col., Boone, N.C.	1903	B. B. Dougherty	1,260	315	72	—	44,000
Aquinas College, Grand Rapids, Mich.	1923	Arthur F. Bukowski	635	99	40	1,412,000	20,000
Arizona, University of, Tucson, Ariz.	1885	James B. McCormick	5,901	2,538	340	98,971	215,000
Arizona State Col., Flagstaff, Ariz.	1899	Lacey A. Eastburn	699	271	51	—	34,614
Arizona State Col., Tempe, Ariz.	1885	Grady Gammage	4,415	1,681	175	—	80,000
Arkansas, University of, Fayetteville, Ark.	1871	Lewis W. Jones	4,770	2,198	313	152,666	250,754
Arkansas A. and M. Col., Monticello, Ark.	1909	Horace E. Thompson	721	197	42	—	14,000
Arkansas Polytech. Col., Russellville, Ark.	1909	J. W. Hull	1,191	334	71	—	19,793
Arkansas State Agri. and Mech. Col. (Jr.), Magnolia, Ark.	1910	Charlie S. Wilkins	621	105	36	—	16,139
Arkansas State College, State College, Ark.	1910	W. J. Edens	1,395	421	69	—	26,000
Arkansas State Tch. Col., Conway, Ark.	1907	Nolen M. Irby	1,587	442	71	—	3,171
Arlington State Col. (Jr.), Arlington, Tex.	1917	E. H. Hereford	1,790	334	96	—	27,762
Armstrong Junior College, Savannah, Ga.	1935	Foreman M. Hawes	389	53	26	20,367	6,500
Asbury College, Wilmore, Ky.	1890	Z. T. Johnson	905	152	44	1,000,000	40,000
Ashland College, Ashland, Ohio	1878	Glenn L. Clayton	686	219	46	454,700	24,705
Atlanta University, Atlanta, Ga.	1867	Rufus E. Clement	390	141	71	5,073,117	100,000
Atlantic Union College, S. Lancaster, Mass.	1882	Lewis N. Holm	358	86	34	—	28,662
Augusta, Junior College of, Augusta, Ga.	1925	Eric W. Hardy	554	18	21	—	14,000
Augustana College, Rock Island, Ill.	1860	Conrad Bergendoff	1,193	347	73	1,513,531	75,000
Augustana College, Sioux Falls, S.D.	1860	L. M. Stavig	821	234	51	474,196	28,814
Aurora College, Aurora, Ill.	1893	T. P. Stephens	435	154	38	78,611	32,000
Austin College, Sherman, Tex.	1849	W. B. Guerrant	624	184	42	1,100,000	22,209
Austin Peay State College, Clarksville, Tenn.	1929	Halbert Harvill	880	306	59	—	22,575
Averett College (Jr.), Danville, Va.	1859	Curtis V. Bishop	295	4	27	79,329	8,600
B							
Baker University, Baldwin City, Kan.	1858	Nelson P. Horn	690	127	42	1,445,000	60,000
Bakersfield College (Jr.), Bakersfield, Calif.	1913	Grace V. Bird	1,290	134	51	—	14,900
Baldwin-Wallace College, Berea, Ohio	1845	John L. Knight	1,725	537	93	2,600,000	53,552
Ball State Teachers College, Muncie, Ind.	1918	John R. Emens	3,119	764	183	—	110,441
Barat College of the Sacred Heart, Lake Forest, Ill.	1919	Mother M. Reilly	320	—	35	—	25,000
Barber-Scotia College, Concord, N.C.	1867	L. S. Cozart	141	1	18	800,000	12,000
Bard College, Annandale-on-Hudson, N.Y.	1860	Edward C. Fuller	272	50	41	173,964	60,000
Barnard College, New York, N.Y.	1889	Millicent C. McIntosh	1,074	15	118	5,339,219	68,000
Barry College, Miami, Fla.	1940	Mother Mary Gerald	273	4	22	—	14,800
Bates College, Lewiston, Me.	1864	Charles F. Phillips	783	181	55	2,404,758	80,000
Bay City Junior College, Bay City, Mich.	1922	Eric J. Bradner	467	30	32	—	12,919
Baylor Univ., Waco, Tex.	1845	William R. White	5,283	2,006	236	$ 3,289,972	145,000
Beaver College, Jenkintown, Pa.	1853	Raymon M. Kistler	602	8	69	—	24,000
Belhaven College, Jackson, Miss.	1894	Guy T. Gillespie	225	2	28	514,103	20,145
Belmont Abbey Col. (Jr.), Belmont, N.C.	1878	Vincent G. Taylor	260	54	33	—	50,000
Beloit College, Beloit, Wis.	1846	Carey Croneis	1,095	309	75	2,682,453	156,000
Bemidji State Tch. Col., Bemidji, Minn.	1919	C. R. Sattgast	607	206	56	—	26,085
Benedict College, Columbia, S.C.	1870	J. A. Bacoats	727	142	54	337,118	19,750
Bennett College, Greensboro, N.C.	1873	David D. Jones	483	—	39	1,081,090	26,379
Bennett Junior College, Millbrook, N.Y.	1891	Courtney Carroll	195	—	32	200,000	11,250
Bennington College, Bennington, Vt.	1932	F. H. Burkhardt	349	5	54	110,000	30,000
Berea College, Berea, Ky.	1855	Francis S. Hutchins	1,111	142	95	12,427,000	111,000
Bessie Tift College, Forsyth, Ga.	1849	William F. Gunn	251	1	28	515,000	18,400
Bethany College, Bethany, W.Va.	1840	Wilbur H. Cramblet	704	182	42	3,093,767	48,000
Bethany College, Lindsborg, Kan.	1881	Emory Lindquist	382	84	31	481,996	25,176
Bethel College, North Newton, Kan.	1887	Edmund G. Kaufman	396	27	45	672,968	26,500
Bethune-Cookman Col., Daytona Beach, Fla.	1872	Richard V. Moore	1,056	493	50	535,983	18,138
Birmingham-South. Col., Birmingham, Ala.	1856	George R. Stuart, Jr.	951	307	54	1,416,306	60,000
Bishop College, Marshall, Tex.	1880	Joseph J. Rhoads	741	182	61	20,004	18,000
Bishop's College, U. of, Lennoxville, Que., Can.	1845	A. R. Jewitt	225	16	19	1,750,000	30,000
Blackburn College, Carlinville, Ill.	1857	Robert P. Ludlum	311	37	28	1,491,405	16,000
Black Hills Teachers College, Spearfish, S.D.	1883	Russell E. Jonas	365	144	35	—	26,000
Bluefield State College, Bluefield, W.Va.	1895	H. L. Dickason	497	132	32	—	16,000
Blue Mountain Col., Blue Mountain, Miss.	1873	Lawrence T. Lowrey	269	—	30	518,000	20,506
Boise Junior College, Boise, Ida.	1932	Eugene B. Chaffee	676	106	43	—	12,000
Boston, Teachers College of the City of, Boston, Mass.	1852	William F. Looney	570	83	37	—	31,000
Boston College, Chestnut Hill, Mass.	1863	Wm. L. Keleher	7,776	3,203	385	1,000,000	224,497
Boston University, Boston, Mass.	1839	Daniel L. Marsh	31,638	14,000	1,074	5,200,000	290,000
Bowdoin College, Brunswick, Me.	1794	Kenneth C. M. Sills	923	283	73	10,403,182	221,000
Bowling Green St. Univ., Bowling Green, O.	1910	Frank J. Prout	4,684	1,278	247	—	105,000
Bradford Junior College, Bradford, Mass.	1803	Dorothy M. Bell	277	—	30	500,000	18,831
Bradley University, Peoria, Ill.	1897	David B. Owen	3,695	1,919	267	2,492,157	72,000
Brenau College, Gainesville, Ga.	1878	Josiah Crudup	233	—	30	650,000	22,838
Briar Cliff College, Sioux City, Ia.	1930	Sister Jean Marie	426	2	32	95,000	21,000
Briarcliff Junior Col., Briarcliff Manor, N.Y.	1932	Clara Tead	227	—	35	—	11,000
Bridgeport, Univ. of, Bridgeport, Conn.	1927	James H. Halsey	3,327	1,659	169	—	26,000
Bridgewater College, Bridgewater, Va.	1880	Warren D. Bowman	494	129	30	478,000	15,000
Brigham Young University, Provo, Utah	1875	Howard S. McDonald	4,908	1,420	250	287,000	160,150
British Columbia, Univ. of, Vancouver, B.C., Can.	1915	N. A. M. MacKenzie	7,540	2,072	377	405,948	260,000
Brooklyn, Polytechnic Inst. of, Brooklyn, N.Y.	1854	H. S. Rogers	6,060	3,155	407	1,499,243	40,000
Brooklyn College, Brooklyn, N.Y.	1930	Harry D. Gideonse	21,037	2,720	766	—	188,177
Brown University, Providence, R.I.	1764	Henry M. Wriston	4,438	1,625	437	14,139,681	721,000
Bryn Mawr College, Bryn Mawr, Pa.	1880	Katharine E. McBride	770	17	95	7,892,909	204,000
Bucknell University, Lewisburg, Pa.	1846	Horace A. Hildreth	2,295	813	140	1,675,927	112,000
Buffalo, University of, Buffalo, N.Y.	1846	Samuel P. Capen	10,851	5,535	1,077	7,274,417	246,591
Butler University, Indianapolis, Ind.	1855	Maurice O. Ross	4,811	1,551	250	6,000,000	125,000
C							
California, University of, Berkeley, Los Angeles, Santa Barbara, San Francisco, Davis, Mount Hamilton, La Jolla, and Riverside, Calif.	1868	Robert G. Sproul	43,426	16,936	3,754	48,332,641	2,611,605
California Inst. of Tech., Pasadena, Calif.	1891	Lee A. DuBridge	1,141	544	321	22,000,000	69,184
California State Polytechnic College, San Luis Obispo, Calif.	1901	Julian A. McPhee	2,909	1,656	173	—	16,000
Calvin College and Seminary, Grand Rapids, Mich.	1876	Henry Schultze	1,501	287	64	200,000	35,800
Campbell College (Jr.), Buie's Creek, N.C.	1887	Leslie H. Campbell	397	99	34	180,000	12,000
Canal Zone Jr. Col., Balboa Heights, C.Z.	1933	Roger C. Hackett	717	25	17	—	10,000
Canisius College, Buffalo, N.Y.	1870	Raymond W. Schouten	3,526	1,350	107	148,372	45,836
Capital University, Columbus, Ohio.	1850	Harold L. Yochum	1,018	182	105	672,410	54,100
Carbon College (Jr.), Price, Utah	1938	Aaron E. Jones	800	66	43	—	6,000
Carleton College, Northfield, Minn.	1866	Laurence M. Gould	1,100	135	103	3,928,349	150,537
Carnegie Institute of Tech., Pittsburgh, Pa.	1900	Robert E. Doherty	3,315	1,241	303	29,264,442	85,000
Carroll College, Waukesha, Wis.	1846	N. V. Russell	704	239	53	1,147,717	41,362
Carson-Newman Col., Jefferson City, Tenn.	1851	Harley D. Fite	881	169	45	649,573	29,804
Carthage College, Carthage, Ill.	1870	Morris Wee	588	167	35	758,047	39,312
Case Institute of Technology, Cleveland, O.	1880	T. Keith Glennan	2,404	1,187	203	6,315,134	41,540
Catawba College, Salisbury, N.C.	1851	A. R. Keppel	766	298	54	665,000	30,893
Catholic Univ. of America, Wash., D.C.	1887	Patrick J. McCormick	4,646	1,600	491	5,695,602	390,000
Cedar Crest College, Allentown, Pa.	1867	Dale Hendry Moore	360	5	38	168,783	26,000
Centenary College of La., Shreveport, La.	1825	Joe J. Mickle	1,622	880	85	861,957	30,600
Centenary Junior Col., Hackettstown, N.J.	1867	Edward W. Seay	407	—	26	28,842	11,067

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Central College, Fayette, Mo.	1855	E. P. Puckett	758	171	47	$ 1,054,555	50,000
Central College, Pella, Ia.	1853	G. T. Vander Lugt	475	113	45	422,000	24,000
Centralia Junior College, Centralia, Wash.	1925	William H. Bloom	234	69	21	—	—
Central Junior College, El Centro, Calif.	1922	E. W. Waterman	205	22	27	—	7,081
Central Michigan College of Education, Mt. Pleasant, Mich.	1892	Charles L. Anspach	4,258	782	154	—	74,123
Central Missouri St. Col., Warrensburg, Mo.	1871	G. W. Diemer	1,629	388	93	—	70,000
Central State College, Edmond, Okla.	1891	W. Max Chambers	1,090	346	70	—	30,711
Central Wash. Col. of Educ., Ellensburg, Wash.	1891	Robert E. McConnell	1,558	413	100	—	50,000
Centre College of Kentucky, Danville, Ky.	1819	Walter A. Groves	591	162	45	2,287,018	56,000
Chaffey Junior College, Ontario, Calif.	1883	Daniel B. Milliken	963	179	64	—	37,000
Charleston, College of, Charleston, S.C.	1770	George D. Grice	301	51	21	620,356	33,583
Chattanooga, Univ. of, Chattanooga, Tenn.	1886	David A. Lockmiller	1,816	616	98	1,054,897	50,000
Chestnut Hill College, Philadelphia, Pa.	1871	Sister Maria Kostka	438	3	52	94,000	34,000
Cheyney Training School for Teachers, Cheyney, Pa.	1837	L. P. Hill	379	71	26	—	22,434
Chicago, School of the Art Inst. of, Chicago, Ill.	1879	C. Hubert Ropp	3,792	923	84	—	54,500
Chicago, University of, Chicago, Ill.	1890	Robert M. Hutchins	8,963	3,360	890	72,344,407	1,750,000
Chicago City Junior College, Chicago, Ill.							
Herzl Branch	1934	James M. McCallister	1,369	48	58	—	19,201
Wilson Branch	1934	O. S. Williams	3,626	253	119	—	70,000
Wright Branch	1934	Leland L. Medsker	5,103	850	159	—	41,995
Chicago Musical College, Chicago, Ill.	1867	Rudolph Ganz	1,311	183	98	—	5,500
Chicago Teachers College, Chicago, Ill.	1869	Raymond M. Cook	1,238	40	72	—	68,300
Chico State College, Chico, Calif.	1889	Aymer J. Hamilton	1,528	515	72	—	41,500
Christian College (Jr.), Columbia, Mo.	1851	J. C. Miller	326	—	38	115,000	15,000
Cincinnati, University of, Cincinnati, Ohio	1819	Raymond Walters	16,009	6,046	926	11,445,579	636,022
Citadel, The, Charleston, S.C.	1842	C. P. Summerall	1,660	547	129	—	47,821
Citrus Junior College, Azusa, Calif.	1915	Wesley V. Smith	195	37	40	—	6,500
Claflin University, Orangeburg, S.C.	1869	J. J. Seabrook	424	83	41	167,027	14,462
Clark College, Atlanta, Ga.	1869	James P. Brawley	792	141	45	986,295	20,366
Clark College (Jr.), Vancouver, Wash.	1933	P. F. Gaiser	1,006	235	44	—	5,000
Clarke College, Dubuque, Ia.	1843	Sister Mary Graham	456	2	59	305,625	27,126
Clarkson Col. of Technology, Potsdam, N.Y.	1895	Jess H. Davis	1,779	1,003	106	1,477,203	20,337
Clark University, Worcester, Mass.	1887	Howard B. Jefferson	1,067	458	76	6,277,476	200,000
Clemson Agricultural Col., Clemson, S.C.	1889	Robert F. Poole	3,360	1,418	263	297,000	110,000
Coalinga Junior College, Coalinga, Calif.	1932	Donald C. Carr	165	18	8	—	6,000
Coe College, Cedar Rapids, Ia.	1851	Byron S. Hollinshead	712	232	60	2,500,000	56,000
Coker College, Hartsville, S.C.	1908	Donald C. Agnew	276	26	34	693,000	24,000
Colby College, Waterville, Maine	1813	Julius S. Bixler	1,092	214	78	4,000,000	130,000
Colby Junior College, New London, N.H.	1837	H. Leslie Sawyer	409	—	37	603,000	20,000
Colgate University, Hamilton, N.Y.	1819	Everett N. Case	1,421	387	125	5,826,617	180,000
Colleges of the Seneca, Geneva, N.Y.	—	Alan W. Brown	1,115	251	153	712,000	89,188
Hobart College	1822	Alan W. Brown	830	249	77	—	—
William Smith College	1908	Alan W. Brown	285	2	76	—	—
Colorado, University of, Boulder, Colo.	1876	Robert L. Stearns	9,701	3,402	658	938,708	675,759
Colorado A. & M. College, Fort Collins, Colo.	1876	William E. Morgan	3,898	1,693	263	591,125	130,000
Colorado College, Colorado Springs, Colo.	1874	William H. Gill	1,276	363	80	3,205,587	145,000
Colorado School of Mines, Golden, Colo.	1874	Ben H. Parker	1,135	622	97	—	75,000
Colorado State Col. of Educ., Greeley, Colo.	1889	William R. Ross	2,131	773	142	—	111,213
Colorado Woman's College (Jr.), Denver, Colo.	1888	James E. Huchingson	503	—	36	118,775	10,667
Columbia College, Columbia, S.C.	1854	Walter K. Greene	336	—	33	600,000	20,000
Columbia University, New York, N.Y.	1754	Dwight D. Eisenhower	29,153	12,910	3,207	82,934,247	1,865,964
Compton College, (Jr.), Compton, Calif.	1927	O. Scott Thompson	5,512	583	150	—	25,000
Concord College, Athens, W.Va.	1872	Virgil H. Stewart	997	308	53	—	20,000
Concordia College, Moorhead, Minn.	1891	J. N. Brown	1,103	215	81	572,025	34,941
Concordia Collegiate Inst. (Jr.), Bronxville, N.Y.	1881	Albert E. Meyer	126	3	15	—	16,000
Connecticut, Tch. Col. of, New Britain, Conn.	1849	Herbert D. Welte	1,840	410	132	—	37,323
Connecticut, University of, Storrs, Conn.	1881	A. N. Jorgensen	9,317	3,857	687	159,276	130,000
Connecticut College for Women, New London, Conn.	1911	Rosemary Park	863	—	104	2,306,696	121,974
Converse College, Spartanburg, S.C.	1889	Edw. M. Gwathmey	374	3	44	643,353	37,250
Cooper Union, New York, N. Y.	1859	Edwin S. Burdell	1,437	290	258	9,637,870	125,000
Copiah-Lincoln Jr. Col., Wesson, Miss.	1928	J. M. Ewing	372	60	32	—	10,250
Cornell College, Mount Vernon, Iowa	1853	Russell D. Cole	739	104	66	2,893,581	60,000
Cornell University, Ithaca, N.Y.	1865	C. W. de Kiewiet	9,661	3,354	1,026	40,834,606	1,400,000
Cottey Junior College for Women, Nevada, Mo.	1884	Blanche Hinman Dow	166	—	18	58,359	10,050
Creighton University, Omaha, Neb.	1878	William H. McCabe	2,829	1,282	409	9,300,000	162,900
Culver-Stockton College, Canton, Mo.	1853	W. H. McDonald	441	94	35	773,574	33,000
Cumberland Col. (Jr.), Williamsburg, Ky.	1889	J. M. Boswell	382	62	24	660,000	8,000
D							
Dakota Wesleyan University, Mitchell, S.D.	1885	Samuel M. Hilburn	314	106	30	$ 584,716	30,000
Dalhousie Univ., Halifax, N.S., Can.	1818	Alexander E. Kerr	1,668	430	209	4,280,606	113,788
Danbury State Tch. Col., Danbury, Conn.	1904	Ruth A. Haas	365	64	56	—	25,000
Dartmouth College, Hanover, N.H.	1769	John Sloan Dickey	2,936	730	346	26,178,456	671,750
Davidson College, Davidson, N.C.	1836	John R. Cunningham	883	130	59	5,182,887	50,000
Davis and Elkins Col., Elkins, W. Va.	1904	R. B. Purdum	788	302	41	226,000	26,000
Dayton, University of, Dayton, Ohio	1850	George J. Renneker	3,406	1,527	174	—	46,000
Dearborn Junior College, Dearborn, Mich.	1938	Fred K. Eshleman	863	214	36	—	17,000
Delaware, University of, Newark, Del.	1833	William S. Carlson	3,898	1,129	198	5,767,631	160,000
Delaware State College, Dover, Del.	1891	M. E. Thomasson	286	117	31	—	16,000
Del Mar College, Corpus Christi, Tex.	1935	E. L. Harvin	2,207	992	168	—	6,775
Delta State Tch. Col., Cleveland, Miss.	1924	William M. Kethley	559	188	60	—	25,000
Denison University, Granville, Ohio.	1831	Kenneth I. Brown	1,370	232	93	3,695,145	89,825
Denver, University of, Denver, Colo.	1864	Albert C. Jacobs	11,135	6,605	750	2,143,294	246,558
De Paul University, Chicago, Ill.	1898	Comerford J. O'Malley	11,471	3,347	350	4,000,000	88,000
DePauw University, Greencastle, Ind.	1837	Clyde E. Wildman	2,053	334	128	6,575,621	110,120
Detroit, University of, Detroit, Mich.	1877	Celestin J. Steiner	9,179	4,830	476	1,700,000	145,000
Dickinson College, Carlisle, Pa.	1773	William W. Edel	1,015	265	73	2,250,000	84,000
Dillard University, New Orleans, La.	1930	Albert W. Dent	513	116	47	3,000,000	25,000
Dixie Junior College, St. George, Utah	1911	Glenn E. Snow	249	52	30	—	10,500
Doane College, Crete, Neb.	1872	David L. Crawford	431	101	33	1,360,000	33,029
Drake University, Des Moines, Ia.	1881	H. G. Harmon	5,333	2,147	226	1,566,000	120,000
Drew University, Madison, N.J.	1867	Fred G. Holloway	645	200	57	5,830,000	201,049
Drexel Institute of Tech., Philadelphia, Pa.	1891	James Creese	6,405	3,315	413	4,241,484	101,501
Drury College, Springfield, Mo.	1873	J. F. Findlay	842	251	68	1,011,905	60,000
Dubuque, University of, Dubuque, Ia.	1852	Rollo La Porte	682	159	45	1,300,000	30,000
Duchesne College, Omaha, Neb.	1881	Mother Mary Downey	235	1	20	—	21,000
Duke University, Durham, N.C.	1838	A. Hollis Edens	5,085	1,578	498	49,952,000	960,000
Duluth Junior College, Duluth, Minn.	1927	Roger R. Kelsey	142	45	14	—	10,009
Dunbarton College of Holy Cross, Wash., D.C.	1935	Sr. Mary Frederick	233	—	28	—	23,800
Duquesne University, Pittsburgh, Pa.	1878	Francis P. Smith	5,165	2,549	271	2,000,000	44,553
D'Youville College, Buffalo, N.Y.	1908	Sister Margaret of the Sacred Heart	402	4	34	—	27,700
E							
Earlham College, Richmond, Ind.	1847	Thomas E. Jones	758	140	56	1,544,440	72,000
East Carolina Tch. Col., Greenville, N.C.	1907	J. D. Messick	1,759	430	98	—	70,328
East Central Junior Col., Decatur, Miss.	1928	L. O. Todd	425	361	44	—	7,000
East Central State College, Ada, Okla.	1909	Chas. F. Spencer	1,358	433	66	—	37,276
Eastern Illinois State Col., Charleston, Ill.	1895	Robert G. Buzzard	1,858	367	130	—	68,580
Eastern Kentucky St. Tch. Col., Richmond, Ky.	1906	W. F. O'Donnell	1,465	473	97	—	79,438
Eastern Montana College of Education, Billings, Mont.	1925	A. G. Peterson	479	106	28	—	15,500
Eastern Nazarene College, Wollaston, Mass.	1918	Edward S. Mann	508	95	30	—	19,500
Eastern New Mexico Univ., Portales, N.M.	1927	Floyd D. Golden	749	206	60	31,135	24,830
Eastern Oregon Col. of Educ., La Grande, Ore.	1929	Roben J. Maaske	578	137	34	—	23,335
Eastern Washington Col. of Educ., Cheney, Wash.	1890	Walter W. Isle	1,531	471	103	—	57,000
East Los Angeles Jr. Col., Los Angeles, Calif.	1945	Rosco C. Ingalls	3,027	347	149	—	7,300
East Tennessee St. Col., Johnson City, Tenn.	1911	Burgin Dossett	2,003	520	93	—	40,000
East Texas State Tch. Col., Commerce, Tex.	1889	James G. Gee	2,549	739	112	—	101,389
Edinburg Regional College, Edinburg, Tex.	1927	H. A. Hodges	617	115	35	—	9,431
El Camino Junior College, Lawndale, Calif.	1946	Forrest G. Murdock	3,342	527	77	—	7,000
Elizabeth City St. Tch. Col., Elizabeth City, N.C.	1891	Sidney D. Williams	477	50	30	—	21,000
Elizabethtown College, Elizabethtown, Pa.	1899	A. C. Baugher	890	258	32	600,000	16,500
Elmhurst College, Elmhurst, Ill.	1871	Henry W. Dinkmeyer	743	199	49	317,000	43,500
Elmira College, Elmira, N.Y.	1855	Lewis Eldred	355	2	52	600,000	60,000
Elon College, Elon College, N.C.	1889	Leon Edgar Smith	773	335	41	622,932	37,600
Emmanuel College, Boston, Mass.	1919	Sr. Margaret Patricia	693	3	58	—	28,000
Emmanuel Miss. Col., Berrien Spgs., Mich.	1874	Alvin W. Johnson	1,042	265	57	300,000	40,372
Emory and Henry College, Emory, Va.	1836	Foye G. Gibson	570	192	30	716,510	24,584
Emory at Oxford (Jr.), Oxford, Ga.	1836	Virgil Y. C. Eady	204	12	14	—	6,240
Emory at Valdosta (Jr.), Valdosta, Ga.	1928	E. D. Whisonant	114	22	17	200,000	4,853
Emory University, Emory University, Ga.	1836	Goodrich C. White	3,840	1,600	575	18,121,325	312,957
Erskine College, Due West, S.C.	1839	R. C. Grier	465	140	37	408,000	26,000
Evansville College, Evansville, Ind.	1854	Lincoln B. Hale	1,509	593	93	400,000	27,784
Eveleth Junior College, Eveleth, Minn.	1919	E. T. Carlstedt	120	8	24	—	12,500
Everett Junior College, Everett, Wash.	1941	J. F. Marvin Buechel	658	152	51	—	5,000
F							
Fairleigh Dickinson Col. (Jr.), Rutherford, N.J.	1941	Peter Sammartino	1,993	627	102	400,000	10,256
Fairmont State College, Fairmont, W.Va.	1867	George H. Hand	1,200	396	60	—	33,613

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Fayetteville State Tch. Col., Fayetteville, N.C.	1877	J. W. Seabrook	542	72	34	—	25,724
Fenn College, Cleveland, Ohio	1881	Edward Hodnett	5,325	2,750	261	$ 809,060	29,700
Finch Junior College, New York, N.Y.	1900	Roland R. De Marco	235	—	42	—	9,700
Findlay College, Findlay, Ohio	1882	H. Clifford Fox	324	102	24	465,697	14,220
Fisk University, Nashville, Tenn.	1866	Charles S. Johnson	882	193	65	4,486,381	100,800
Flat River, Junior Col. of, Flat River, Mo.	1922	Charles E. Bess	180	36	16	—	9,434
Flint Junior College, Flint, Mich.	1923	L. A. Pratt	824	177	35	—	14,000
Florida, University of, Gainesville, Fla.	1853	J. Hillis Miller	10,528	4,390	654	328,285	364,985
Florida A. and M. Col., Tallahassee, Fla.	1887	H. Manning Efferson	1,827	450	138	—	20,069
Florida Normal and Industrial College, St. Augustine, Fla.	1892	John Lee Tilley	337	33	27	—	6,000
Florida Southern College, Lakeland, Fla.	1885	Ludd M. Spivey	1,761	781	106	1,200,000	38,000
Florida State Univ., Tallahassee, Fla.	1857	Doak S. Campbell	5,517	1,300	395	206,000	165,578
Fontbonne College, Saint Louis, Mo.	1923	Mother Mary M. Casey	618	1	51	—	25,600
Fordham University, New York, N.Y.	1841	Laurence J. McGinley	9,846	3,347	454	1,067,607	240,879
Fort Hays Kansas State Col., Hays, Kan.	1902	M. C. Cunningham	1,019	265	102	—	70,000
Fort Valley State College, Fort Valley, Ga.	1895	C. V. Troup	1,100	108	50	65,093	17,750
Frances Shimer Col. (Jr.), Mount Carroll, Ill.	1853	John H. Russel	118	—	17	198,110	13,556
Franklin and Marshall Col., Lancaster, Pa.	1787	Theodore A. Distler	1,383	522	87	1,675,500	115,000
Franklin College, Franklin, Ind.	1834	Harold W. Richardson	590	166	38	1,214,126	42,217
Fresno State College, Fresno, Calif.	1911	Arnold E. Joyal	3,350	987	184	—	78,593
Fullerton Junior College, Fullerton, Calif.	1913	W. T. Boyce	1,350	164	65	—	16,000
Furman University, Greenville, S.C.	1826	John Laney Plyler	1,253	407	77	4,244,619	70,000
G							
Gardner-Webb Jr. Col., Boiling Springs, N.C.	1905	Philip Lovin Elliott	434	89	24	251,962	8,685
General Beadle St. Tch. Col., Madison, S.D.	1881	V. A. Lowry	170	32	27	—	24,200
Geneva College, Beaver Falls, Pa.	1848	Charles M. Lee	862	320	40	767,534	36,000
George Peabody Col. for Tch., Nashville, Tenn.	1875	Henry H. Hill	2,024	843	140	5,502,987	539,726
George Pepperdine Col., Los Angeles, Calif.	1937	Hugh M. Tiner	1,563	668	95	1,000,000	31,806
Georgetown College, Georgetown, Ky.	1829	Samuel S. Hill	675	189	50	571,484	18,000
Georgetown University, Washington, D.C.	1789	Hunter Guthrie	5,583	2,755	650	3,500,000	394,000
Georgetown Visitation Jr. College, Washington, D.C.	1919	Sister Margaret Mary Sheerin	138	—	20	—	12,000
George Washington Univ., Washington, D.C.	1821	Cloyd H. Marvin	12,225	6,536	850	2,830,000	170,000
George Williams College, Chicago, Ill.	1890	Harold Coe Coffman	400	228	32	246,120	25,000
Georgia, University of, Athens, Ga.	1785	Jonathan C. Rogers	6,301	2,700	570	2,063,815	241,608
Georgia, Univ. of, Atlanta Div., Atlanta, Ga.	1914	George M. Sparks	5,600	2,720	185	—	24,775
Georgia Institute of Tech., Atlanta, Ga.	1885	Blake R. Van Leer	5,097	2,468	279	655,159	102,000
Georgia Military Col. (Jr.), Milledgeville, Ga	1879	J. H. Jenkins	450	52	32	—	4,700
Georgian Court College, Lakewood, N.J.	1908	Sister Marie Anna	210	1	39	—	30,000
Georgia Southwestern Col. (Jr.), Americus, Ga.	1926	Henry King Stanford	381	41	16	—	14,299
Georgia State Col., Savannah, Ga.	1891	W. K. Payne	1,270	476	73	—	15,830
Georgia St. Col. for Wom., Milledgeville, Ga.	1889	Guy H. Wells	829	4	92	—	47,380
Georgia State Womans Col., Valdosta, Ga.	1906	J. Ralph Thaxton	303	1	25	—	25,535
Georgia Teachers College, Collegeboro, Ga.	1908	Zach S. Henderson	765	202	45	—	33,000
Gettysburg College, Gettysburg, Pa.	1832	Henry W. A. Hanson	1,245	457	90	600,000	62,000
Glendale College (Jr.), Glendale, Calif.	1927	Elmer T. Worthy	2,302	410	92	—	15,000
Glenville State College, Glenville, W.Va.	1872	Harry B. Heflin	553	120	31	—	22,500
Gogebic Junior College, Ironwood, Mich.	1932	Arthur E. Erickson	244	130	17	—	8,845
Gonzaga University, Spokane, Wash.	1887	Francis E. Corkery	1,649	896	130	3,445,845	76,281
Good Counsel College, White Plains, N.Y.	1923	Sister M. Dolores	354	1	36	—	16,751
Gordon Military Col. (Jr.), Barnesville, Ga.	1852	J. E. Guillebeau	360	36	19	—	5,250
Goshen College, Goshen, Ind.	1894	Ernest E. Miller	732	46	49	250,000	37,570
Goucher College, Baltimore, Md.	1885	Otto F. Kraushaar	713	5	72	2,101,339	87,324
Graceland College (Jr.), Lamoni, Ia.	1895	E. J. Gleazer, Jr.	576	73	32	259,000	21,000
Grand Rapids Jr. Col., Grand Rapids, Mich.	1914	Arthur Andrews	1,037	175	51	—	14,000
Grant Technical College (Jr.), Del Paso Heights, Calif.	1942	Wyman E. Olson	670	84	39	—	1,500
Grays Harbor Junior College, Aberdeen, Wash.	1929	George L. Hall	300	61	20	—	6,000
Great Falls, Col. of, Col. of Educ., Great Falls, Mont.	1932	J. J. Donovan	545	117	43	—	23,804
Green Mountain Junior Col., Poultney, Vt.	1834	Howard C. Ackley	293	2	26	99,920	13,000
Greensboro College, Greensboro, N.C.	1838	Luther L. Gobbel	356	—	33	629,323	33,178
Grinnell College, Grinnell, Ia.	1846	Samuel N. Stevens	1,113	201	90	3,512,298	120,000
Grove City College, Grove City, Pa.	1876	Weir C. Ketler	1,442	451	71	921,851	46,541
Guilford College, Guilford College, N.C.	1837	Clyde A. Milner	562	195	33	819,625	31,000
Gulf Park College (Jr.), Gulfport, Miss.	1919	Richard G. Cox	288	—	28	—	6,047
Gustavus Adolphus Col., St. Peter, Minn.	1862	Edgar M. Carlson	1,193	306	71	1,290,821	34,000
H							
Hamilton College, Clinton, N.Y.	1812	Robert W. McEwen	600	134	60	4,654,313	217,612
Hamline University, St. Paul, Minn.	1854	Hurst Robins Anderson	1,256	363	88	4,181,475	55,500
Hampden-Sydney Col., Hamp.-Sydney, Va.	1776	Edgar G. Gammon	408	72	27	$ 1,200,000	37,700
Hampton Institute, Hampton, Va.	1868	Alonzo G. Moron	1,472	482	139	10,000,000	77,674
Hanover College, Hanover, Ind.	1827	Albert G. Parker, Jr.	719	187	42	2,500,000	46,000
Hardin College, Wichita Falls, Tex.	1922	James B. Boren	2,304	360	108	400,000	14,280
Hardin-Simmons University, Abilene, Tex.	1891	Rupert N. Richardson	1,829	533	86	1,330,000	41,836
Harris Teachers College, St. Louis, Mo.	1857	Charles A. Naylor, Jr.	1,090	90	60	—	23,755
Hartnell College (Jr.), Salinas, Calif.	1920	John B. Lemos	766	90	46	—	9,158
Hartwick College, Oneonta, N.Y.	1928	Henry F. Arnold	516	174	43	251,442	16,892
Harvard University, Cambridge, Mass.	1636	James B. Conant	11,105	5,342	2,400	177,000,000	5,250,000
Hastings College, Hastings, Neb.	1882	Wm. M. French	730	196	49	704,089	37,000
Haverford College, Haverford, Pa.	1833	Gilbert F. White	527	81	63	4,951,402	180,000
Hawaii, University of, Honolulu, T.H.	1907	Gregg M. Sinclair	4,840	1,013	258	77,860	200,057
Heidelberg College, Tiffin, Ohio	1850	W. Terry Wickham	796	183	60	1,263,653	39,475
Henderson St. Tch. Col., Arkadelphia, Ark.	1929	D. D. McBrien	1,074	251	71	—	31,556
Hendrix College, Conway, Ark.	1884	Matt L. Ellis	511	103	37	1,522,164	53,000
Hershey Junior College, Hershey, Pa.	1938	V. H. Fenstermacher	122	27	18	—	16,824
Hibbing Junior College, Hibbing, Minn.	1916	S. A. Patchin	285	40	30	—	6,794
Highland Park Junior Col., Highland Pk., Mich.	1918	G. O. Withey	1,642	382	64	—	7,255
Hillsdale College, Hillsdale, Mich.	1844	Harvey L. Turner	686	229	41	768,686	33,000
Hillyer College, Hartford, Conn.	1883	Alan S. Wilson	2,224	1,286	168	—	15,000
Hinds Junior College, Raymond, Miss.	1917	G. M. McLendon	751	205	60	—	7,000
Hiram College, Hiram, Ohio	1850	Paul H. Fall	604	162	43	1,039,275	61,000
Hofstra College, Hempstead, N.Y.	1935	John C. Adams	3,071	1,257	142	771,255	31,500
Hollins College, Hollins College, Va.	1842	Bessie C. Randolph	337	1	41	726,082	45,358
Holmes Jr. College, Goodman, Miss.	1925	C. W. Lorance	301	70	24	—	10,000
Holy Cross, Col. of the, Worcester, Mass.	1843	John A. O'Brien	1,823	531	112	476,000	127,000
Holy Names, Col. of the, Oakland, Calif.	1880	Sr. M. Rose Emmanuella	432	12	46	—	30,557
Holy Names College, Spokane, Wash.	1907	Sister M. F. Xavier	278	3	33	—	—
Hood College, Frederick, Md.	1893	Andrew Gehr Truxal	525	3	53	873,409	30,770
Hope College, Holland, Mich.	1851	Irwin J. Lubbers	1,083	311	65	1,000,000	53,000
Houghton College, Houghton, N.Y.	1883	Stephen W. Paine	787	161	50	285,409	27,211
Howard College, Birmingham, Ala.	1842	Harwell G. Davis	1,218	550	79	778,350	43,000
Howard University, Washington, D.C.	1867	Mordecai W. Johnson	4,693	1,757	467	1,595,971	258,902
H. Sophie Newcomb Mem. Col. for Women, Tulane Univ., New Orleans, La.	1886	Logan Wilson	675	11	84	—	331,712
Humboldt State College, Arcata, Calif.	1914	Arthur S. Gist	740	271	48	—	23,212
Hunter College of the City of New York, New York, N.Y.	1870	George N. Shuster	12,092	856	750	—	168,842
Huntingdon College, Montgomery, Ala.	1854	Hubert Searcy	672	95	43	490,121	35,000
Huron College, Huron, S.D.	1883	George F. McDougall	291	116	25	764,338	27,000
I							
Idaho, College of, Caldwell, Ida.	1891	Ledru A. Williams	490	176	35	600,000	23,000
Idaho, University of, Moscow, Ida.	1889	J. E. Buchanan	3,537	1,238	248	4,971,501	124,589
Idaho State College, Pocatello, Ida.	1927	Carl W. McIntosh	1,664	679	130	—	26,000
Illinois, University of, Urbana, Ill.	1867	George D. Stoddard	28,592	9,330	3,977	2,807,310	2,283,501
Illinois College, Jacksonville, Ill.	1829	Harris G. Hudson	516	164	35	1,330,698	37,550
Illinois Institute of Technology, Chicago, Ill.	1892	Henry Townley Heald	8,256	4,104	405	3,000,000	115,000
Illinois State Normal Univ., Normal, Ill.	1857	R. W. Fairchild	2,438	426	258	—	134,493
Illinois Wesleyan Univ., Bloomington, Ill.	1850	M. J. Holmes	1,229	358	82	1,470,523	45,070
Immaculata College, Immaculata, Pa.	1920	V. L. Burns	318	—	45	—	25,000
Immaculata Junior Col., Wash., D.C.	1922	Sister M. Genevieve	100	—	14	—	11,000
Immaculate Heart Col., Los Angeles, Calif	1916	Sister M. Eucharia	854	20	55	—	43,320
Incarnate Word College, San Antonio, Tex.	1881	Sister M. Columkille	570	30	62	225,157	37,988
Indiana Central College, Indianapolis, Ind.	1902	Lynd Esch	451	132	34	118,054	22,164
Indiana State Tch. Col., Terre Haute, Ind.	1865	Ralph N. Tirey	2,600	881	164	—	156,000
Indiana University, Bloomington, Ind.	1820	Herman B Wells	23,213	8,122	1,625	3,393,000	800,339
Iowa, State University of, Iowa City, Ia.	1847	Virgil M. Hancher	10,383	4,313	1,150	1,446,762	711,890
Iowa State College of A. & M. Arts, Ames, Ia.	1858	Charles E. Friley	8,845	3,405	1,458	1,200,000	390,000
Iowa State Tch. Col., Cedar Falls, Ia.	1876	Malcolm Price	2,950	553	333	—	140,000
Iowa Wesleyan College, Mount Pleasant, Ia.	1842	J. S. Pennepacker	609	148	42	559,831	30,000
J							
Jackson College, Jackson, Miss.	1877	Jacob L. Reddix	1,239	423	46	—	13,000
Jackson Junior College, Jackson, Mich.	1928	W. N. Atkinson	447	88	30	—	14,734
James Millikin University, Decatur, Ill.	1901	J. Walter Malone	1,377	540	94	2,753,570	48,000
James Ormond Wilson Tch. Col., Wash., D.C.	1873	Walter E. Hager	744	61	49	—	28,528
Jamestown College, Jamestown, N.D.	1883	Samuel S. George	447	90	28	1,357,117	24,041
Jamestown Ext., Alfred Univ. (Jr.), Jamestown, N.Y.	1934	George A. Beebe	163	29	15	—	3,493
Jefferson City Junior College, Jefferson City, Mo.	1926	Joe Nichols, Jr.	775	53	33	—	7,564

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Jersey City Jr. Col., Jersey City, N.J.	1946	Frank J. McMackin	606	—	27	—	6,000
John B. Stetson University, De Land, Fla.	1883	J. Ollie Edmunds	1,941	913	111	$ 1,255,237	61,836
John Carroll University, Cleveland, Ohio	1886	Frederick E. Welfle	2,329	908	107	4,300,000	49,000
John McNeese Jr. Col., L.S.U., Lake Charles, La.	1939	L. E. Frazar	397	65	33	—	10,000
John Muir College(Jr.), Pasadena, Calif.	1946	Archie M. Turrell	2,551	197	124	—	16,000
Johns Hopkins University, Baltimore, Md.	1876	Detlev W. Bronk	6,982	2,463	1,235	35,294,036	782,000
Johnson C. Smith University, Charlotte, N.C.	1867	Hardy Liston	697	173	40	2,000,000	32,000
*Joliet Junior College, Joliet, Ill.	1901	E. W. Rowley	457	90	50	—	13,000
Jones County Junior Col., Ellisville, Miss.	1927	J. B. Young	908	390	70	—	15,000
Joplin Junior College, Joplin, Mo.	1937	Roi S. Wood	460	76	28	—	5,956
Judson College, Marion, Ala.	1838	J. I. Riddle	183	—	25	615,000	20,000
Juniata College, Huntingdon, Pa.	1876	Calvert N. Ellis	650	174	48	837,299	53,000
K							
Kalamazoo College, Kalamazoo, Mich.	1833	John Scott Everton	636	191	50	1,005,018	42,134
Kansas, University of, Lawrence, Kan.	1865	Deane W. Malott	8,758	3,911	1,011	1,250,000	406,000
Kansas City, Jr. College of, Kansas City, Mo.	1915	A. M. Swanson	2,000	242	76	—	32,000
Kansas City, University of, Kansas City, Mo.	1929	Clarence R. Decker	3,544	1,914	195	501,097	98,898
Kansas State College of Agri. and App. Sci., Manhattan, Kan.	1863	Milton S. Eisenhower	7,032	3,006	504	577,121	148,362
Kansas State Tch. Col., Emporia, Kan.	1863	D. L. MacFarlane	1,490	523	119	250,000	97,676
Kansas State Tch. Col., Pittsburg, Kan.	1903	Rees H. Hughes	1,987	942	130	—	80,424
Keene Teachers College, Keene, N.H.	1909	Lloyd P. Young	486	115	51	—	23,104
Kemper Military School (Jr.), Boonville, Mo.	1844	H. C. Johnston	375	3	35	260,000	6,500
Kent State University, Kent, Ohio	1910	George A. Bowman	7,012	2,627	404	—	96,960
Kentucky, University of, Lexington, Ky.	1865	H. L. Donovan	7,545	3,417	465	198,428	437,162
Kentucky St. Col., Frankfort, Ky.	1886	R. B. Atwood	642	186	44	—	20,927
Kentucky Wesleyan College, Winchester, Ky.	1866	Paul S. Powell	245	65	18	329,622	23,112
Kenyon College, Gambier, Ohio	1824	Gordon K. Chalmers	560	152	60	2,386,000	125,000
Keuka College, Keuka Park, N.Y.	1892	Katherine G. Blyley	443	—	39	396,035	37,626
Keystone Junior College, La Plume, Pa.	1868	Blake Tewksbury	366	122	32	333,000	15,000
Kilgore College (Jr.), Kilgore, Tex.	1935	B. E. Masters	1,087	327	54	—	12,614
King College, Bristol, Tenn.	1867	R. T. L. Liston	232	41	14	618,025	12,170
King's College, Univ. of, Halifax, N.S., Can.	1789	A. Stanley Walker	156	11	12	1,100,000	35,000
Knox College, Galesburg, Ill.	1837	Sharvy G. Umbeck	872	213	68	2,804,917	79,500
Knoxville College, Knoxville, Tenn.	1875	J. Reed Miller	251	60	17	562,894	11,388
L							
Lafayette College, Easton, Pa.	1826	Ralph C. Hutchison	2,020	830	145	5,083,079	131,000
La Grange College, La Grange, Ga.	1831	Waights G. Henry	212	15	36	521,105	14,075
Lake Erie College, Painesville, Ohio	1856	Helen D. Bragdon	190	1	35	780,330	37,470
Lake Forest College, Lake Forest, Ill.	1857	Ernest A. Johnson	997	255	50	1,429,851	61,775
Lamar College (Jr.), Beaumont, Tex.	1923	John E. Gray	1,059	280	64	14,000	9,000
Lane College, Jackson, Tenn.	1882	J. H. White	428	94	22	30,398	12,000
La Salle College, Philadelphia, Pa.	1863	Brother G. Paul	2,500	1,400	90	—	25,000
LaSalle-Peru-Oglesby Jr. Col., LaSalle, Ill.	1924	Francis H. Dolan	221	36	26	—	12,768
Lasell Junior College, Auburndale, Mass.	1851	Raymond C. Wass	503	—	48	65,000	13,000
La Sierra College, Arlington, Calif.	1922	G. T. Anderson	767	217	55	—	24,182
Lassen Junior College, Susanville, Calif.	1925	L. V. Greenleaf	195	65	15	—	500
Laval University, Quebec, Que., Can.	1852	Ferdinand Vandry	8,450	130	1,050	5,000,000	842,689
Lawrence College, Appleton, Wis.	1847	Nathan M. Pusey	1,011	238	80	1,750,000	74,736
Lebanon Valley College, Annville, Pa.	1866	Clyde A. Lynch	1,092	349	55	1,269,018	44,010
Lee Junior College, Baytown, Tex.	1934	George H. Gentry	570	136	26	—	12,000
Lehigh University, Bethlehem, Pa.	1865	Martin D. Whitaker	3,475	1,308	305	8,260,029	285,000
LeMoyne College, Memphis, Tenn.	1870	Hollis F. Price	496	76	26	2,332	19,000
Lenoir Rhyne College, Hickory, N.C.	1891	Voigt R. Cromer	792	278	41	725,000	27,000
Lewis and Clark College, Portland, Ore.	1867	Morgan S. Odell	1,411	649	90	325,000	23,780
Limestone College, Gaffney, S.C.	1845	Robert C. Granberry	316	34	32	800,000	27,000
Lincoln College (Jr.), Lincoln, Ill.	1865	Raymond N. Dooley	112	13	14	500,000	14,500
Lincoln Memorial Univ., Harrogate, Tenn.	1897	Robert L. Kincaid	543	130	35	861,022	36,000
Lincoln University, Jefferson City, Mo.	1866	Sherman D. Scruggs	781	224	100	—	38,856
Lincoln University, Lincoln University, Pa.	1854	Horace M. Bond	459	123	40	1,032,351	43,000
Lindenwood College, St. Charles, Mo.	1827	Franc L. McCluer	377	—	52	2,920,605	32,500
Linfield College, McMinnville, Ore.	1858	Harry L. Dillin	807	257	52	927,363	38,000
Little Rock Junior College, Little Rock, Ark.	1927	John A. Larson	1,211	585	47	1,500,000	19,000
Livingstone College, Salisbury, N.C.	1879	William J. Trent	352	57	32	61,000	26,051
Long Beach City Col. (Jr.), Long Beach, Calif.	1927	George E. Dotson	15,283	1,108	163	—	41,324
Longwood College, Farmville, Va.	1884	D. S. Lancaster	636	26	57	—	51,566
Lon Morris Col. (Jr.), Jacksonville, Tex.	1873	C. E. Peeples	321	12	16	250,000	7,600
Loras College, Dubuque, Ia.	1839	S. D. Luby	1,317	382	82	1,500,000	110,000
Loretto Heights College, Loretto, Colorado	1918	Sister Frances Marie	659	4	61	—	22,000
Los Angeles City Col. (Jr.), Los Angeles, Calif.	1929	Howard S. McDonald	13,232	1,684	595	—	65,000
Louisiana College, Pineville, La.	1906	Edgar Godbold	934	279	47	$ 880,486	20,725
Louisiana Polytechnic Institute, Ruston, La.	1894	R. L. Ropp	2,348	771	184	—	41,988
Louisiana State University and A. and M. College, Baton Rouge, La.	1860	Harold Walter Stoke	9,098	2,915	790	324,313	463,342
Louisville, University of, Louisville, Ky.	1798	John W. Taylor	7,978	3,053	569	2,213,612	156,097
Louisville Municipal College, Louisville, Ky.	1931	John Wilkinson Taylor	428	106	21	—	11,425
Lowell Textile Institute, Lowell, Mass.	1895	Kenneth R. Fox	615	258	69	—	6,100
Lower Columbia Jr. Col., Longview, Wash.	1934	Turfield D. Schindler	400	80	24	—	5,550
Loyola College, Baltimore, Md.	1852	F. X. Talbot	1,636	612	121	92,829	41,025
Loyola University, Chicago, Ill.	1870	James T. Hussey	7,975	2,500	433	1,074,000	203,934
Loyola University, New Orleans, La.	1912	Thomas J. Shields	2,977	1,347	181	5,000,000	100,000
Loyola Univ. of Los Angeles, Los Angeles, Calif.	1911	Charles J. Casassa	2,049	1,115	100	3,000,000	49,607
Luther College, Decorah, Ia.	1861	J. W. Ylvisaker	909	244	52	559,209	68,350
Lycoming College, Williamsport, Pa.	1848	John W. Long	800	353	55	910,000	15,000
Lynchburg College, Lynchburg, Va.	1903	Orville W. Wake	751	229	46	346,428	28,000
Lyons Township Junior Col., La Grange, Ill.	1929	George S. Olsen	383	39	33	—	8,500
M							
Macalester College, St. Paul, Minn.	1885	Charles J. Turck	1,750	458	144	2,412,815	53,000
McGill University, Montreal, Que., Can.	1821	F. Cyril James	7,536	2,453	1,078	33,547,258	543,144
McMaster University, Hamilton, Ont., Can.	1887	G. P. Gilmour	1,081	203	82	1,811,644	70,000
MacMurray Col. for Wom., Jacksonville, Ill.	1846	C. P. McClelland	591	4	52	4,059,540	51,229
McPherson College, McPherson, Kan.	1887	W. W. Peters	368	58	35	445,154	15,000
Madison College, Harrisonburg, Va.	1908	G. Tyler Miller	1,214	68	96	—	54,405
Maine, University of, Orono, Me.	1865	Arthur A. Hauck	4,394	2,146	314	1,290,110	225,600
Manchester College, N. Manchester, Ind.	1889	V. F. Schwalm	897	154	55	618,197	38,104
Manhattan College, New York, N.Y.	1853	Brother B. Thomas	2,622	1,005	156	—	92,300
Manhattanville Col. of Sac. Hrt., N.Y., N.Y.	1841	Mother E. M. O'Byrne	505	11	96	400,902	80,300
Manitoba, University of, Winnipeg, Man., Can.	1877	A. H. S. Gillson	5,488	1,263	204	956,314	130,000
Mankato State Teachers College, Mankato, Minn.	1867	C. L. Crawford	1,625	365	107	—	32,553
Marietta College, Marietta, Ohio	1835	W. Bay Irvine	1,083	555	69	1,794,926	130,342
Marin College of (Jr.), Kentfield, Calif.	1926	Ward H. Austin	867	139	45	—	16,113
Marion Institute (Jr.), Marion, Ala.	1842	James T. Murfee, II	325	43	25	—	5,000
Marquette University, Milwaukee, Wis.	1864	Edward J. O'Donnell	8,404	4,054	672	6,025,280	161,000
Marshall College, Huntington, W.Va.	1837	Stewart H. Smith	3,362	1,186	172	—	70,543
Mars Hill Junior College, Mars Hill, N.C.	1856	Hoyt Blackwell	911	76	54	160,000	24,000
*Mary Allen College (Jr.), Crockett, Tex.	1944	G. L. Prince	184	51	26	—	8,000
Mary Baldwin College, Staunton, Va.	1842	Frank Bell Lewis	311	—	34	525,000	36,346
Marygrove College, Detroit, Mich.	1910	Sister M. Honora	806	3	98	—	55,000
‖Mary Hardin-Baylor College, Belton, Tex.	1845	Gordon G. Singleton	438	17	45	1,253,159	30,546
Maryknoll Teachers College, Maryknoll, N.Y.	1931	Mother Mary Joseph Rogers	128	4	24	—	16,500
Maryland, University of, College Park and Baltimore, Md.	1807	H. C. Byrd	14,421	6,166	1,303	3,000,000	225,000
Maryland State Tch. Col., Frostburg, Md.	1899	Lillian C. Compton	427	97	28	—	20,247
Maryland State Tch. Col., Salisbury, Md.	1925	J. D. Blackwell	340	55	23	—	24,240
Maryland State Tch. Col., Towson, Md.	1865	Earle T. Hawkins	904	102	43	—	36,450
Marylhurst College, Marylhurst, Ore.	1930	Sister M. Rose Augusta	331	4	35	—	22,000
Mary Manse College, Toledo, Ohio	1922	Sister Vincent de Paul Kaley	381	1	52	—	23,567
Marymount College, Salina, Kan.	1922	Mother M. Chrysostom	261	—	34	—	22,800
Marymount College, Tarrytown, N.Y.	1907	M. Thérèse Dalton	525	—	60	1,000,000	20,771
Maryville College, Maryville, Tenn.	1819	Ralph W. Lloyd	905	151	55	2,058,892	52,916
Maryville Col. of the Sac. Hrt., St. Louis, Mo.	1872	Mother Odeide Mouton	300	—	37	—	27,733
Mary Washington College of the University of Virginia, Fredericksburg, Va.	1908	Morgan L. Combs	1,424	38	83	65,000	75,000
Marywood College, Scranton, Pa.	1915	Sister M. Eugenia	729	8	55	75,000	43,749
Mason City Junior Col., Mason City, Ia.	1918	C. H. Beem	511	32	25	—	7,000
Mass., Univ. of, Amherst, Mass.	1863	Ralph A. Van Meter	3,909	1,948	286	323,332	166,000
Mass. Institute of Tech., Cambridge, Mass.	1861	James Rhyne Killian, Jr.	5,458	1,899	817	47,175,000	435,154
Mass. State Tch. Col., Bridgewater, Mass.	1840	John J. Kelly	640	76	43	15,000	26,890
Mass. State Tch. Col., Fitchburg, Mass.	1894	William J. Sanders	596	160	48	—	38,500
Mass. State Tch. Col., Framingham, Mass.	1839	Martin F. O'Connor	544	3	32	—	19,500
Mass. State Tch. Col., N. Adams, Mass.	1894	Grover C. Bowman	329	55	21	—	13,350
Mass. State Tch. Col., Worcester, Mass.	1871	Eugene A. Sullivan	435	76	18	—	17,500
Medical Evangelists, College of, Loma Linda and Los Angeles, Calif.	1909	George T. Harding	644	256	62	—	50,000
Memphis State College, Memphis, Tenn.	1912	Lamar Newport	2,368	619	115	—	48,000
Mercer University, Macon, Ga.	1833	Spright Dowell	1,167	461	63	3,024,134	93,000
Mercyhurst College, Erie, Pa.	1926	Mother M. Borgia Egan	350	3	35	1,680,000	19,500
Meredith College, Raleigh, N.C.	1891	Carlyle Campbell	540	3	46	605,000	32,000
Meridian Municipal Jr. Col., Meridian, Miss.	1937	H. M. Ivy	1,104	305	58	—	12,500
Miami, University of, Coral Gables, Fla.	1925	Bowman F. Ashe	10,764	6,073	511	2,500,000	210,000
Miami University, Oxford, Ohio	1809	Ernest H. Hahne	5,617	1,211	359	—	227,000

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Michigan, University of, Ann Arbor, Mich.	1817	Alexander G. Ruthven	23,827	8,038	1,309	$19,760,436	1,415,650
Michigan Col. of Min. and Tech., Houghton, Mich.	1885	Grover C. Dillman	1,876	954	179	—	55,000
Michigan State College, E. Lansing, Mich.	1855	John A. Hannah	16,243	6,540	998	2,438,167	286,612
Michigan St. Normal Col., Ypsilanti, Mich.	1849	Eugene B. Elliott	2,672	760	230	70,000	130,000
Middlebury College, Middlebury, Vt.	1800	Samuel S. Stratton	1,221	300	75	4,754,000	115,000
Middle Georgia College (Jr.), Cochran, Ga.	1928	Lloyd A. Moll	307	63	19	—	10,000
Middle Tenn. St. Col., Murfreesboro, Tenn.	1911	Q. M. Smith	1,827	365	72	—	35,530
Midland College, Fremont, Neb.	1887	W. P. Hieronymus	437	127	36	220,385	26,500
Miles College, Birmingham, Ala.	1905	W. A. Bell	714	151	32	—	11,600
Millsaps College, Jackson, Miss.	1892	Marion L. Smith	839	185	48	1,303,381	40,000
Mills College, Oakland, Calif.	1852	Lynn White, Jr.	685	31	85	2,501,164	108,629
Milwaukee-Downer Col., Milwaukee, Wis.	1851	Lucia R. Briggs	320	16	49	2,458,714	51,249
Miner Teachers College, Washington, D.C.	1851	Eugene A. Clark	588	24	48	—	42,280
Minnesota, Univ. of, Minneapolis, Minn.	1851	James L. Morrill	34,091	13,489	3,564	32,993,021	1,482,065
Misericordia, College, Dallas, Pa.	1923	Sister Marie Teresa	766	31	48	1,100,000	23,825
Mississippi, University of, University, Miss.	1848	J. D. Williams	3,571	1,348	294	758,558	170,668
Mississippi College, Clinton, Miss.	1826	D. M. Nelson	890	283	46	800,000	36,000
Mississippi Southern Col., Hattiesburg, Miss.	1910	R. C. Cook	2,462	896	134	—	35,379
Mississippi State Col., State College, Miss.	1878	Fred T. Mitchell	3,302	1,647	243	245,789	88,984
Mississippi St. Col. for Wom., Columbus, Miss.	1884	B. L. Parkinson	975	2	81	—	75,000
Missouri, University of, Columbia, Mo.	1839	F. A. Middlebush	12,848	5,757	766	2,265,579	600,000
Missouri Valley College, Marshall, Mo.	1888	H. Roe Bartle	507	186	42	613,227	32,000
Modesto Junior College, Modesto, Calif.	1921	Henry T. Tyler	1,234	211	75	—	24,000
Monmouth College, Monmouth, Ill.	1853	James Harper Grier	862	152	65	2,000,000	50,000
Montana School of Mines, Butte, Mont.	1895	Francis A. Thomson	327	186	30	800,000	21,573
Montana State College, Bozeman, Mont.	1893	Roland R. Renne	2,808	1,165	218	2,028,037	115,000
Montana State University, Missoula, Mont.	1893	James A. McCain	3,369	1,532	223	882,000	268,564
Monterey Peninsula College (Jr.), Monterey, Calif.	1947	Calvin C. Flint	603	51	40	—	6,000
Monticello College (Jr.), Godfrey, Ill.	1838	John R. Young	242	—	33	99,000	22,000
Montreal, University of, Montreal, Que., Can.	1876	Olivier Maurault	7,422	74	1,213	283,526	201,302
Moorhead State Tch. Col., Moorhead, Minn.	1887	O. W. Snarr	724	142	69	—	28,581
Moravian Col. and Theol. Sem., Bethlehem, Pa.	1807	Raymond S. Haupert	441	209	35	790,000	38,000
Morehead State Col., Morehead, Ky.	1923	William J. Baird	617	241	61	—	40,119
Morehouse College, Atlanta, Ga.	1867	Benjamin E. Mays	799	319	39	2,000,000	100,000
Morgan Park Junior College, Chicago, Ill.	1933	Sandford Sellers, Jr.	284	56	16	6,000	6,700
Morgan State College, Baltimore, Md.	1867	Martin D. Jenkins	1,940	472	96	—	40,000
Morningside College, Sioux City, Ia.	1889	E. A. Roadman	1,122	411	61	830,240	55,000
Morris Brown College, Atlanta, Ga.	1881	W. A. Fountain, Jr.	808	216	61	476,665	9,366
Morristown Normal and Industrial College (Jr.), Morristown, Tenn.	1881	Miller Williams Boyd	412	106	20	53,062	18,000
Morton Junior College, Cicero, Ill.	1924	Wm. P. MacLean	622	34	52	—	17,512
Mt. Allison Univ., Sackville, N.B., Can.	1840	W. T. R. Flemington	876	84	52	1,343,782	54,000
Mt. Aloysius Junior College, Cresson, Pa.	1939	Sister M. Magdalene	126	2	17	50,000	7,218
Mount Angel Seminary, St. Benedict, Ore.	1887	Thomas Meier	95	20	18	—	30,000
Mt. Holyoke College, S. Hadley, Mass.	1837	Roswell G. Ham	1,263	1	135	6,885,000	217,300
Mt. Mary College, Milwaukee, Wis.	1915	Edward A. Fitzpatrick	937	6	89	54,000	39,260
Mt. Mercy College, Pittsburgh, Pa.	1929	Mother M. F. McConnell	670	14	51	—	27,000
Mt. Mercy Jr. College, Cedar Rapids, Ia.	1928	Sister Mary Ildephonse	118	0	18	—	11,935
Mt. St. Agnes Col., Baltimore, Md.	1867	Sister M. Placide	195	—	28	—	20,000
Mt. St. Joseph Jr. Col., Maple Mount, Ky.	1925	Mother M. O'Reilly	166	46	18	120,000	11,500
Mt. St. Joseph-on-the-Ohio, Col. of, Mt. St. Joseph, Ohio	1854	Mother Mary Zoe	432	1	51	1,725,000	30,000
Mt. St. Mary College, Hooksett, N.H.	1934	Sister M. Mauritia	187	3	20	—	16,861
Mt. St. Mary's College, Emmitsburg, Md.	1808	John L. Sheridan	680	310	35	350,000	45,000
Mt. St. Mary's College, Los Angeles, Calif.	1925	Sister Agnes Marie	641	43	49	—	20,000
Mt. St. Scholastica College, Atchison, Kan.	1926	Mother Lucy Dooley	369	4	40	—	28,943
Mt. St. Vincent, College of, New York, N.Y.	1910	Sister Catharine Marie	579	—	54	241,960	21,991
Mt. San Antonio College (Jr.), Pomona, Calif.	1946	George H. Bell	1,116	156	65	—	10,000
Mt. Union College, Alliance, Ohio	1846	Charles B. Ketcham	944	259	54	1,355,523	77,000
Muhlenberg College, Allentown, Pa.	1848	Levering Tyson	1,126	501	77	1,080,171	82,000
Multnomah College (Jr.), Portland, Ore.	1897	Edward L. Clark	1,203	753	81	25,000	8,500
Mundelein College, Chicago, Ill.	1930	Sister M. Josephine	891	4	72	—	30,819
Murray State Tch. College, Murray, Ky.	1923	Ralph H. Woods	1,476	561	91	—	39,796
Muskegon Junior Col., Muskegon, Mich.	1926	A. G. Umbreit	417	101	25	—	180,000
Muskingum College, New Concord, Ohio	1837	R. N. Montgomery	910	196	73	953,262	42,000
N							
Napa Junior College, Napa, Calif.	1942	H. M. McPherson	889	201	46	—	8,000
National College of Educ., Evanston, Ill.	1886	K. Richard Johnson	386	5	39	145,185	35,255
Nazareth College, Louisville, Ky.	1920	Sister Mary Anastasia Coady	890	29	58	18,330	28,600
Nazareth College, Nazareth, Mich.	1897	Sister Mary Kevin	252	1	36	10,000	29,866
Nazareth Col. of Rochester, Rochester, N.Y.	1924	Mother Rose Miriam	428	2	54	—	25,000
Nebraska, University of, Lincoln, Neb.	1869	Reuben G. Gustavson	9,359	3,851	542	$1,151,000	500,000
Nebraska State Tch. Col., Chadron, Neb.	1911	Wiley G. Brooks	412	108	51	—	30,000
Nebraska State Tch. Col., Kearney, Neb.	1905	Herbert L. Cushing	882	239	57	—	37,968
Nebraska State Tch. Col., Peru, Neb.	1867	W. L. Nicholas	397	102	50	—	55,000
Nebraska State Tch. Col., Wayne, Neb.	1910	Victor P. Morey	833	157	60	—	38,741
Nebraska Wesleyan University, Lincoln, Neb.	1887	Carl C. Bracy	868	176	54	929,906	38,906
Nevada, University of, Reno, Nev.	1874	G. E. Parker	1,776	627	129	998,881	76,800
Newark Col. of Engineering, Newark, N.J.	1881	Robert W. Van Houten	2,800	1,526	150	116,010	21,093
Newberry College, Newberry, S.C.	1856	James C. Kinard	508	194	32	330,000	25,000
New Brunswick, University of, Fredericton, N.B., Can.	1800	Albert W. Trueman	1,095	310	85	312,000	41,412
New Hampshire, University of, Durham, N.H.	1866	Arthur S. Adams	3,695	1,470	242	1,472,500	150,861
New Haven State Tch. Col., New Haven, Conn.	1893	Samuel M. Brownell	827	161	66	—	35,183
New Haven YMCA Jr., Col., New Haven, Conn.	1920	Lawrence L. Bethel	945	518	70	100,591	—
New Jersey State Tch. Col., Glassboro, N.J.	1923	Edgar F. Bunce	1.015	86	36	—	30,000
New Jersey State Tch. Col., Jersey City, N.J.	1929	Forrest A. Irwin	805	101	46	—	41,526
New Jersey State Tch. Col., Newark, N.J.	1855	John B. Dougall	682	113	44	—	40,000
New Jersey State Tch. Col., Paterson, N.J.	1855	Clair S. Wightman	950	110	38	—	24,282
New Jersey State Tch. Col., Trenton, N.J.	1855	Roscoe L. West	1,015	150	82	—	60,000
New Jersey State Tch. Col., Upper Montclair, N.J.	1908	Harry A. Sprague	1,802	491	82	51,200	74,456
New Mexico, University of, Albuquerque, N.M.	1889	Thomas L. Popejoy	4,795	2,235	375	1,031,209	170,500
New Mexico College of Agriculture and Mechanic Arts, State College, N.M.	1889	J. W. Branson	1,637	730	150	652,708	64,000
New Mexico Highlands Univ., Las Vegas, N.M.	1893	Edward Eyring	939	440	66	—	37,155
New Mexico Military Inst., Roswell, N.M.	1893	Hugh M. Milton, II	554	20	45	1,198,921	27,000
New Mexico School of Mines, Socorro, N.M.	1889	E. J. Workman	244	163	27	—	11,000
New Mexico Western Col., Silver City, N.M.	1893	Haddon W. James	576	176	70	—	28,267
New Rochelle, Col. of, New Rochelle, N.Y.	1904	Mother Dorothea	831	1	70	118,000	61,810
New York, Col. of the City of, N.Y., N.Y.	1847	Harry N. Wright	34,722	7,662	1,539	534,632	350,000
New York State Col. for Tch., Albany, N.Y.	1844	Evan R. Collins	1,556	230	122	—	45,602
New York State Tch. Col., Brockport, N.Y.	1866	Donald M. Tower	1,180	247	75	—	26,000
New York State Tch. Col., Buffalo, N.Y.	1872	Harry W. Rockwell	1,968	256	150	—	34,500
New York State Tch. Col., Cortland, N.Y.	1863	Donnal V. Smith	1,576	228	106	—	40,000
New York State Tch. Col., Fredonia, N.Y.	1866	Leslie R. Gregory	911	111	82	—	20,829
New York State Tch. Col., Geneseo, N.Y.	1867	Herbert G. Espy	643	54	77	—	40,240
New York State Tch. Col., New Paltz, N.Y.	1886	Wm. J. Haggerty	779	53	72	—	18,474
New York State Tch. Col., Oneonta, N.Y.	1889	Charles W. Hunt	828	53	57	—	34,704
New York State Tch. Col., Oswego, N.Y.	1861	Harvey M. Rice	1,638	386	109	—	40,058
New York State Tch. Col., Plattsburg, N.Y.	1889	Charles C. Ward	730	60	75	—	26,373
New York State Tch. Col., Potsdam, N.Y.	1869	Frederick W. Crumb	686	51	65	—	16,719
New York University, New York, N.Y.	1831	Harry W. Chase	47,936	20,865	3,847	14,160,139	845,179
Niagara University, Niagara Univ., N.Y.	1856	Francis L. Meade	1,861	701	114	—	50,000
Norfolk Division of Virginia State College, Norfolk, Va.	1935	James H. Johnston	900	467	40	—	6,062
North Carolina, Agri. and Tech. Col. of, Greensboro, N.C.	1891	F. D. Bluford	2,803	1,288	135	—	36,743
North Carolina, Univ. of, Chapel Hill, N.C.	1789	R. B. House	7,515	3,394	346	4,000,000	628,000
North Carolina, Woman's College of the University of, Greensboro, N.C.	1891	W. C. Jackson	2,196	21	184	155,275	134,373
North Carolina Col. at Durham, Durham, N.C.	1910	A. Elder	1,146	242	87	—	36,461
North Carolina State College of Agri. and Eng., Raleigh, N.C.	1889	J. W. Harrelson	4,603	2,430	443	125,000	112,000
North Central College, Naperville, Ill.	1861	C. H. Geiger	869	226	48	1,330,000	40,196
North Dakota, Univ. of, Grand Forks, N.D.	1883	John C. West	2,763	1,133	175	1,934,451	157,000
North Dakota Agricultural Col., Fargo, N.D.	1889	Fred Samuel Hultz	2,261	855	173	1,910,419	86,636
North Dakota State Normal and Industrial College, Ellendale, N.D.	1889	J. C. McMillan	300	68	21	—	19,000
North Dakota State Tch. Col., Dickinson, N.D.	1918	Charles E. Scott	318	68	29	—	19,680
North Dakota State Tch. Col., Mayville, N.D.	1889	C. P. Lura	247	61	25	346,178	20,856
North Dakota State Tch. Col., Minot, N.D.	1913	C. C. Swain	824	166	65	—	33,985
North Dakota State Tch. Col., Valley City, N.D.	1889	R. L. Lokken	495	101	48	668,000	36,737
Northeast Agricultural Junior College, Sheridan, Wyo.	1948	Thomas E. Kuiper	110	23	12	—	1,000
Northeastern Oklahoma A. & M. College, Miami, Okla.	1919	Bruce G. Carter	681	272	30	—	8,000
Northeastern State College, Tahlequah, Okla.	1846	John Vaughan	1,180	427	63	—	45,000
Northeastern University, Boston, Mass.	1898	Carl S. Ell	11,401	6,803	431	2,913,818	49,387
Northeast Junior Col., L.S.U., Monroe, La.	1931	Rodney Cline	422	100	29	—	10,790
Northeast Missouri St. Tch. Col., Kirksville, Mo.	1867	Walter H. Ryle	1,138	298	65	—	105,000
Northern Baptist Theological Seminary, Chicago, Ill.	1913	Charles W. Koller	377	121	21	71,238	42,500

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Northern Idaho Col. of Educ., Lewiston, Ida.	1893	Glenn W. Todd	810	172	44	—	25,000
Northern Illinois State Tch. Col., De Kalb, Ill.	1895	Leslie A. Holmes	2,223	505	85	—	72,264
Northern Michigan Col. of Educ., Marquette Mich.	1899	H. A. Tape	1,022	437	78	—	42,566
Northern Montana Col. (Jr.), Havre, Mont.	1929	G. H. Vande Bogart	395	55	25	—	21,621
Northern Oklahoma Junior College, Tonkawa, Okla.	1901	Loren N. Brown	362	63	31	—	9,778
Northern State Tch. Col., Aberdeen, S.D.	1901	N. E. Steele	831	219	46	—	31,560
North Georgia Col., Dahlonega, Ga.	1873	Merit E. Hoag	689	64	41	—	18,762
North Idaho Junior College, Coeur d'Alene, Ida.	1939	George O. Kildow	301	102	20	—	8,000
North Park College (Jr.), Chicago, Ill.	1891	Clarence A. Nelson	1,177	188	50	$ 319,579	20,270
North Texas State Tch. Col., Denton, Tex.	1890	W. J. McConnell	5,262	1,252	302	—	192,532
Northwestern State College, Alva, Okla.	1897	Sabin C. Percefull	563	151	40	—	32,833
Northwestern State Col., Natchitoches, La.	1884	G. W. McGinty	1,553	339	96	—	58,483
Northwestern Univ., Evanston and Chgo., Ill.	1851	J. Roscoe Miller	22,822	9,604	1,100	60,000,000	987,956
Northwest Missouri St. Tch. Col., Maryville, Mo.	1905	J. W. Jones	894	221	54	—	36,000
Northwest Nazarene College, Nampa, Ida.	1913	Lewis T. Corlett	646	158	44	—	14,000
Norwich University, Northfield, Vt.	1819	Homer L. Dodge	597	117	45	1,690,086	47,430
Notre Dame, University of, Notre Dame, Ind.	1842	John J. Cavanaugh	4,968	1,609	501	7,183,103	250,501
Notre Dame College, South Euclid, Ohio	1922	Mother Mary Anselm Langenderfer	284	1	35	—	25,631
Notre Dame College of Staten Island, Staten Island, N.Y.	1931	Mother Saint Egbert	290	—	25	—	12,000
Notre Dame Jr. Col., St. Louis, Mo.	1925	Sister M. Chrysologa	93	—	9	—	10,000
Notre Dame of Maryland, Col. of, Baltimore, Md.	1873	Sister Mary Frances	403	2	54	160,787	32,303
O							
Oakwood College, Huntsville, Ala.	1896	F. L. Peterson	305	97	22	—	8,176
Oberlin College, Oberlin, Ohio	1833	William E. Stevenson	2,156	364	168	23,833,025	479,000
Occidental College, Los Angeles, Calif.	1887	Arthur G. Coons	1,466	513	97	1,486,664	92,000
Oceanside-Carlsbad College (Jr.), Oceanside, Calif.	1934	Kenneth P. Bailey	276	86	46	1,400	5,000
Ohio State University, Columbus, Ohio	1870	Howard L. Bevis	22,538	9,400	2,049	2,909,980	805,600
Ohio University, Athens, Ohio	1804	John Calhoun Baker	5,888	1,807	396	90,000	187,000
Ohio Wesleyan University, Delaware, Ohio	1842	Arthur S. Flemming	2,103	337	144	4,686,385	183,008
Oklahoma, University of, Norman, Okla.	1890	George Lynn Cross	11,502	4,820	631	5,931,238	314,931
Oklahoma A. and M. College, Stillwater, Okla.	1891	Henry G. Bennett	11,428	5,566	752	5,154,454	235,000
Oklahoma Col. for Women, Chickasha, Okla.	1908	Dan Procter	710	5	50	—	38,700
Olympic Junior College, Bremerton, Wash.	1946	L. J. Elias	612	215	40	—	4,000
Omaha, Municipa University of, Omaha, Neb.	1908	Philip Milo Bail	1,951	616	78	120,215	85,932
Orange Coast Col. (Jr.), Costa Mesa, Calif.	1948	Basil H. Peterson	691	142	41	—	5,122
Oregon, Univ. of, Eugene and Portland, Ore.	1872	Harry K. Newburn	6,637	2,527	468	1,470,559	510,000
Oregon College of Educ., Monmouth, Ore.	1861	Henry M. Gunn	593	186	46	—	30,790
Oregon State College, Corvallis, Ore.	1868	A. L. Strand	6,782	2,796	489	287,524	239,390
Ottawa, University of, Ottawa, Ont., Can.	1848	J.-C. Laframboise	4,103	75	342	120,000	145,000
Ottawa University, Ottawa, Kan.	1865	A. B. Martin	540	154	34	455,385	25,000
Otterbein College, Westerville, Ohio.	1847	J. Gordon Howard	885	236	65	1,314,500	35,000
*Ottumwa Heights Col. (Jr.), Ottumwa, Ia.	1925	Sister Marie Ancille	109	1	20	—	11,500
Ouachita Baptist Col., Arkadelphia, Ark.	1886	S. W. Eubanks	756	170	43	580,000	14,000
Our Lady of the Elms, Col. of, Chicopee, Mass.	1928	John R. Rooney	270	—	25	—	15,472
Our Lady of the Lake Col., San Antonio, Tex.	1912	John L. McMahon	421	38	62	513,256	47,723
P							
Pacific, College of the, Stockton, Calif.	1851	Robert E. Burns	1,265	561	131	687,425	48,000
Pacific Lutheran Col., Parkland, Wash.	1894	S. C. Eastvold	992	374	59	103,150	35,000
Pacific Union College, Angwin, Calif.	1882	P. W. Christian	908	245	73	—	39,624
Pacific University, Forest Grove, Ore.	1849	Walter C. Giersbach	957	537	62	405,250	40,000
Packer Collegiate Inst. (Jr.), Brooklyn, N.Y.	1845	Paul D. Shafer	59	—	23	1,429,218	12,652
Paine College, Augusta, Ga.	1882	Edmund C. Peters	320	42	25	33,117	28,050
Palm Beach Jr. Col., W. Palm Beach, Fla.	1933	John I. Leonard	352	74	21	—	6,328
Palomar College, (Jr.), Vista, Calif.	1946	Elon Earl Hildreth	407	137	27	—	4,200
Palo Verde Junior College, Blythe, Calif.	1947	George W. Mabel	209	43	14	—	2,000
Paris Junior College, Paris, Tex.	1924	J. R. McLemore	550	162	27	—	9,024
Park College, Parkville, Mo.	1875	J. L. Zwingle	451	69	45	2,000,000	45,385
Parsons College, Fairfield, Ia.	1875	Tom E. Shearer	385	108	31	505,000	22,000
Pasadena City Col. (Jr.), Pasadena, Calif.	1924	John W. Harbeson	7,178	1,092	300	—	40,000
Pasadena College, Pasadena, Calif.	1902	Westlake T. Purkiser	712	188	40	—	32,000
Peace College, Raleigh, N.C.	1872	William C. Pressly	265	—	20	200,000	11,062
Pearl River Junior Col., Poplarville, Miss.	1912	R. D. McLendon	512	190	26	—	6,000
Pennsylvania, Univ. of, Philadelphia, Pa.	1740	Harold E. Stassen	19,884	8,230	2,260	31,000,000	1,165,210
Pennsylvania Col. for Wom., Pittsburgh, Pa.	1869	Paul R. Anderson	519	5	54	$ 1,087,542	35,800
Pennsylvania State Col., State College, Pa.	1855	James Milholland	14,755	5,010	1,023	517,000	353,182
Pa. State Tch. Col., Bloomsburg, Pa.	1839	Harvey A. Andruss	946	322	50	—	34,194
Pa. State Tch. Col., California, Pa.	1852	Robert M. Steele	1,060	388	72	—	28,310
Pa. State Tch. Col., Clarion, Pa.	1867	Paul G. Chandler	879	235	57	—	20,000
Pa. State Tch. Col., E. Stroudsburg, Pa.	1893	Joseph F. Noonan	1,009	382	54	—	26,000
Pa. State Tch. Col., Edinboro, Pa.	1857	L. H. Van Houten	669	195	44	—	28,135
Pa. State Tch. Col., Indiana, Pa.	1871	Willis E. Pratt	1,748	374	102	—	28,455
Pa. State Tch. Col., Kutztown, Pa.	1866	Q. A. W. Rohrbach	1,077	275	55	—	25,688
Pa. State Tch. Col., Lock Haven, Pa.	1877	Richard T. Parsons	735	273	50	—	25,000
Pa. State Tch. Col., Mansfield, Pa.	1862	James G. Morgan	819	204	78	—	31,500
Pa. State Tch. Col., Millersville, Pa.	1854	D. L. Biemesderfer	1,020	288	88	—	33,000
Pa. State Tch. Col., Shippensburg, Pa.	1871	Harry L. Kriner	776	267	51	—	30,395
Pa. State Tch. Col., Slippery Rock, Pa.	1889	Dale W. Houk	971	258	68	—	23,739
Pa. State Tch. Col., West Chester, Pa.	1871	Charles S. Swope	1,766	325	99	—	40,000
Perkinston Junior College, Perkinston, Miss.	1911	A. L. May	528	252	35	—	6,000
Pfeiffer Junior College, Misenheimer, N.C.	1903	C. M. Waggoner	289	23	23	500,000	7,500
Philander Smith College, Little Rock, Ark.	1868	M. LaFayette Harris	602	127	43	2,000,000	26,000
Phillips University, Enid, Okla.	1907	Eugene S. Briggs	1,207	274	62	963,846	50,047
Phoenix College, Phoenix, Ariz.	1920	Robert J. Hannelly	1,657	357	64	—	20,355
Pikeville College, (Jr.), Pikeville, Ky.	1889	A. A. Page	325	41	26	313,704	11,000
Pine Manor Junior Col., Wellesley, Mass.	1911	Marie Warren Potter	254	—	30	—	7,000
Pittsburgh, University of, Pittsburgh, Pa.	1787	Rufus H. Fitzgerald	19,296	9,334	1,629	8,273,702	548,200
Placer College, Auburn, Calif.	1936	Harold M. Weaver	435	102	25	—	7,200
Plymouth Teachers College, Plymouth, N.H.	1870	Howard R. Jones	480	91	39	—	18,350
Pomona College, Claremont, Calif.	1887	E. Wilson Lyon	1,088	233	101	4,819,478	118,700
Porterville Col. (Jr.), Porterville, Calif.	1927	B. E. Jamison	230	80	23	—	9,043
Port Huron Junior Col., Port Huron, Mich.	1923	John H. McKenzie	317	60	16	—	7,101
Portland, University of, Portland, Ore.	1901	Theodore J. Mehling	2,034	1,046	151	—	60,000
Potomac State School of West Virginia University (Jr.), Keyser, W.Va.	1902	E. E. Church	485	150	32	—	10,000
Prairie View Agricultural & Mechanical College of Texas, Prairie View, Tex.	1876	E. B. Evans	2,225	400	128	26,000	36,299
Presbyterian College, Clinton, S.C.	1880	Marshall W. Brown	500	175	32	520,000	31,000
Princeton University, Princeton, N.J.	1746	Harold W. Dodds	3,794	750	470	46,000,000	1,500,000
Principia College, Elsah, Ill.	1898	Frederic E. Morgan	449	63	36	997,963	40,000
Providence College, Providence, R.I.	1919	Robert J. Slavin	2,876	814	102	57,000	30,000
Puerto Rico, Polytech. Inst. of, San German, P.R.	1912	Edward G. Seel	540	162	35	392,000	15,000
Puerto Rico, Univ. of, Río Piedras, P.R.	1903	Jaime Benítez	9,749	2,014	397	2,626,984	110,948
Puget Sound, College of, Tacoma, Wash.	1888	R. Franklin Thompson	1,931	800	110	1,500,000	53,000
Purdue University, West Lafayette, Ind.	1869	Frederick L. Hovde	16,791	8,999	1,660	340,000	271,170
Q							
Queens College, Charlotte, N.C.	1857	Hunter B. Blakely	379	12	42	600,000	25,000
Queens College, Flushing, N.Y.	1937	John J. Theobald	4,430	178	232	20,000	77,000
Queen's University, Kingston, Ontario, Can.	1841	R. C. Wallace	2,607	874	119	5,424,924	219,000
R							
Radcliffe College, Cambridge, Mass.	1879	Wilbur K. Jordan	1,270	21	450	7,770,924	100,000
Radford College, Woman's Division of Virginia Polytechnic Institute, Radford, Va.	1910	David W. Peters	846	6	62	—	33,587
Randolph-Macon College, Ashland, Va.	1830	J. Earl Moreland	526	153	33	1,078,337	42,281
Randolph-Macon Woman's Col., Lynchburg, Va.	1893	Theodore H. Jack	660	3	79	1,328,796	69,500
Redlands, University of, Redlands, Calif.	1907	George H. Armacost	1,291	419	87	2,863,282	79,455
*Reed College, Portland, Ore.	1911	E. B. MacNaughton	691	300	60	1,525,255	87,270
Reedley College, (Jr.), Reedley, Calif.	1926	Leo Wolfson	635	165	30	—	9,500
Regis College, Weston, Mass.	1927	Sr. Mary St. Ignatius	568	—	59	190,100	32,000
Rensselaer Polytechnic Inst., Troy, N.Y.	1824	Livingston W. Houston	4,595	2,351	409	12,527,700	46,183
Rhode Island Col. of Educ., Providence, R.I.	1854	Lucius A. Whipple	493	65	60	—	24,706
Rhode Island State College, Kingston, R.I.	1892	Carl R. Woodward	2,489	890	217	—	100,179
Rice Institute, Houston, Tex.	1912	William V. Houston	1,564	298	142	30,000,000	200,000
Richmond, University of, Richmond, Va.	1832	George M. Modlin	2,919	1,209	159	2,941,741	115,000
Ricker Junior College, Houlton, Me.	1848	John A. Laberee	215	55	23	50,000	5,000
Ricks College (Jr.), Rexburg, Ida.	1888	John L. Clarke	507	80	31	—	15,000
Ripon College, Ripon, Wis.	1851	Clark G. Kuebler	690	157	54	1,038,647	48,103
Riverside College (Jr.), Riverside, Calif.	1916	A. G. Paul	863	149	45	—	20,000
Rivier College, Nashua, N.H.	1933	M. St. Pascal	195	1	26	—	13,500
Roanoke College, Salem, Va.	1842	H. Sherman Oberty	529	156	37	680,447	25,000
Rochester, University of, Rochester, N.Y.	1850	Alan Valentine	6,933	2,407	800	62,606,817	496,097
Rockford College, Rockford, Ill.	1847	Mary Ashby Cheek	603	28	55	1,031,448	40,000
Rockhurst College, Kansas City, Mo.	1910	Thomas M. Knapp	1,108	625	68	—	21,000
Rocky Mountain College, Billings, Mont.	1883	William D. Copeland	250	150	21	500,000	25,000
*Rollins College, Winter Park, Fla.	1885	Hamilton Holt	624	210	62	1,029,322	80,000

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Roosevelt College, Chicago, Ill.	1945	Edward J. Sparling	5,685	2,150	350	—	45,000
Rosary College, River Forest, Ill.	1910	Sister M. Timothea	673	2	74	$ 136,230	60,435
Rosemont College, Rosemont, Pa.	1921	Mother Mary Boniface	350	3	43	—	39,500
Rose Polytechnic Institute, Terre Haute, Ind.	1874	Ford L. Wilkinson, Jr.	375	196	40	2,300,000	24,000
Russell Sage College, Troy, N.Y.	1916	Lewis A. Froman	667	61	55	1,100,000	52,602
Rutgers University (incl. N.J. College for Women), New Brunswick and Newark, N.J.	1766	Robert C. Clothier	19,417	8,454	1,066	6,409,934	546,530
S							
Sacramento Jr. Col. Sacramento, Calif.	1916	J. Paul Mohr	2,334	450	107	—	30,000
St. Ambrose College, Davenport, Ia.	1882	Ambrose J. Burke	1,436	462	72	600,000	29,480
St. Anselm's College, Manchester, N.H.	1889	Bertrand C. Dolan	690	317	48	—	16,500
St. Augustine's College, Raleigh, N.C.	1867	Harold L. Trigg	458	79	27	—	18,000
St. Bede Junior College, Peru, Ill.	1891	Lawrence Vohs	99	15	20	—	24,000
St. Benedict, College of, St. Joseph, Minn.	1913	Mother Richarda Peters	265	3	34	6,800	28,000
St. Benedict's College, Atchison, Kan.	1858	Cuthbert McDonald	515	135	44	170,869	100,000
St. Bernard College (Jr.), St. Bernard, Ala.	1892	Boniface Seng	380	80	26	100,000	25,000
St. Bernardine of Siena Col., Loudonville, N.Y.	1937	Mark Kennedy	2,455	1,466	110	—	30,000
St. Bonaventure Col., St. Bonaventure, N.Y.	1859	Juvenal Lalor	2,139	932	106	116,100	102,000
St. Catherine, College of, St. Paul, Minn.	1911	Sister Antonine O'Brien	776	9	83	650,000	71,492
St. Charles College (Jr.), Catonsville, Md.	1831	George A. Gleason	222	26	14	—	50,000
St. Cloud St. Tch. Col., St. Cloud, Minn.	1869	John W. Headley	1,902	520	118	—	70,000
St. Edward's Seminary, Kenmore, Wash.	1931	James H. Brennan	196	19	18	—	18,000
St. Elizabeth, Col. of, Convent Station, N.J.	1899	Sister Marie José	973	1	58	—	32,000
St. Francis, College of, Joliet, Ill.	1874	Sister M. Aniceta	390	1	49	16,000	36,100
St. Francis College, Loretto, Pa.	1847	Adrian J. M. Veigle	700	354	35	1,385,333	20,000
St. Francis Xavier Col. for Wom., Chicago, Ill.	1912	Sister Mary Huberta	506	4	39	—	56,000
St. Francis Xavier Univ., Antigonish, N.S., Can.	1853	P. J. Nicholson	910	131	44	540,000	38,000
St. John College of Cleveland, Cleveland, Ohio	1928	Robert B. Navin	577	—	36	—	25,402
St. John's University, Brooklyn, N.Y.	1870	John A. Flynn	7,650	3,535	244	500,000	87,727
St. Joseph College, W. Hartford, Conn.	1932	Sister M. Rosa	590	9	45	—	21,920
St. Joseph Junior Col., St. Joseph, Mo.	1915	Nelle Blum	447	42	22	—	8,356
St. Joseph's College, Emmitsburg, Md.	1809	Francis J. Dodd	174	1	32	—	16,600
St. Joseph's College, Philadelphia, Pa.	1851	John J. Long	2,502	1,129	94	—	27,000
St. Joseph's Col. for Women, Brooklyn, N.Y.	1916	William T. Dillon	447	—	47	29,700	30,879
St. Lawrence University, Canton, N.Y.	1856	Eugene G. Bewkes	1,608	499	112	1,624,242	90,000
St. Louis University, St. Louis, Mo.	1818	Paul C. Reinert	9,671	4,169	1,203	4,052,066	419,038
St. Martin's College, Lacey, Wash.	1895	Raphael Heider	356	151	37	—	17,000
St. Mary College, Xavier, Kan.	1923	Arthur M. Murphy	382	10	47	—	36,500
St. Mary of the Springs, Col. of, Columbus, Ohio	1911	Sister M. Angelita	252	2	43	—	30,000
St. Mary-of-the-Wasatch, Col. of, Salt Lake City, Utah	1926	Sister Mary Benedictus	75	2	17	—	12,779
St. Mary-of-the-Woods Col., St. Mary-of-the-Woods, Ind.	1840	Mother Marie Helene	380	1	48	476,774	77,286
St. Mary's Col., Notre Dame, Holy Cross, Ind.	1844	Sister M. Madeleva	666	3	56	151,000	42,100
St. Mary's Col., St. Mary's College, Calif.	1863	Brother Austin	836	304	52	—	48,000
St. Mary's College, Winona, Minn.	1912	Brother Joel	503	120	38	—	26,000
St. Mary's Junior College, O'Fallon, Mo.	1929	Mother M. Borgia	34	—	8	—	13,000
St. Mary's School and Junior College, Raleigh, N.C.	1842	Richard G. Stone	313	—	27	205,677	11,351
St. Michael's College, Winooski Park, Vt.	1904	Daniel P. Lyons	1,137	494	52	86,000	30,000
St. Norbert College, West De Pere, Wis.	1898	B. H. Pennings	747	261	54	—	30,000
St. Olaf College, Northfield, Minn.	1874	Clemens M. Granskou	1,645	313	117	1,050,392	82,700
St. Patrick's Seminary, Menlo Park, Calif.	1898	Thomas C. Mulligan	191	19	18	—	35,000
St. Paul Seminary, St. Paul, Minn.	1894	R. G. Bandas	262	37	22	—	40,000
St. Petersburg Jr. Col., St. Petersburg, Fla.	1927	Roland A. Wakefield	473	103	21	—	10,000
St. Peter's College, Jersey City, N.J.	1872	Vincent Hart	1,852	764	89	550,000	27,000
St. Rose, College of, Albany, N.Y.	1920	Sister Rose of Lima	919	125	79	111,164	22,000
St. Scholastica, College of, Duluth, Minn.	1912	Mother M. Athanasius	400	8	40	230,000	38,000
St. Teresa, Col. of, Kansas City, Mo.	1867	Mother M. Marietta Jennings	261	2	43	—	21,400
St. Teresa, College of, Winona, Minn.	1910	Sr. M. Rachael Dady	584	3	60	—	35,000
St. Thomas, College of, St. Paul, Minn.	1885	Vincent J. Flynn	1,950	841	167	300,000	43,773
St. Vincent College, Latrobe, Pa.	1846	Denis Strittmatter	868	331	53	2,000,000	65,000
Salem College, Winston-Salem, N.C.	1772	Dale H. Gramley	323	19	39	924,853	35,227
Sam Houston State Tch. Col., Huntsville, Tex.	1879	Harmon Lowman	2,316	744	129	—	61,764
Samuel Huston College, Austin, Tex.	1900	Robert F. Harrington	619	150	36	7,765	14,843
San Angelo College (Jr.), San Angelo, Tex.	1928	John A. Guinn	733	310	39	—	7,697
San Benito County Junior College, Hollister, Calif.	1919	Frank A. Bauman	75	7	10	—	6,000
San Bernardino Valley Union Junior College, San Bernardino, Calif.	1926	John L. Lounsbury	1,401	281	70	—	26,946
San Diego Junior College, San Diego, Calif.	1916	John Aseltine	2,408	451	185	—	5,780
San Diego State College, San Diego, Calif.	1897	Walter R. Hepner	4,804	1,875	240	—	120,000
San Francisco, City College of (Jr.), San Francisco, Calif.	1935	Louis G. Conlan	7,081	1,163	259	—	38,000
San Francisco, Univ. of, San Fran., Calif.	1855	William J. Dunne	3,463	1,760	169	—	80,000
San Francisco Col. for Wom., San Fran., Calif.	1930	Mother Leonor Mejia	5465	26	48	—	100,000
San Francisco State Col., San Francisco, Calif.	1899	J. Paul Leonard	6,95	1,313	260	—	62,691
San Jose St. Col., San Jose, Calif.	1857	T. W. MacQuarrie	7,259	2,551	400	—	126,283
San Mateo Junior Col., San Mateo, Calif.	1922	Charles S. Morris	1,728	192	80	—	15,000
San Rafael, Dominican Col. of, San Rafael, Calif.	1915	Sister Mary Patrick	300	4	39	—	40,000
Santa Ana College, (Jr.), Santa Ana, Calif.	1915	Daniel C. McNaughton	818	154	45	—	16,661
Santa Clara, Univ. of, Santa Clara, Calif.	1851	William C. Gianera	1,365	522	92	$ 1,950,000	67,500
Santa Maria Jr. Col., Santa Maria, Calif.	1920	Harry Edward Tyler	218	37	30	—	6,400
Santa Monica City Col., Santa Monica, Calif.	1929	Elmer C. Sandmeyer	3,657	600	80	—	14,000
Santa Rosa Junior Col., Santa Rosa, Calif.	1918	Floyd P. Bailey	1,518	236	50	—	13,987
Sarah Lawrence College, Bronxville, N.Y.	1926	Harold Taylor	352	13	66	294,400	54,000
Saskatchewan, Univ. of, Saskatoon, Sask., Can.	1907	W. P. Thompson	3,300	850	175	206,302	107,000
Scarritt College, Nashville, Tenn.	1924	Hugh C. Stuntz	138	7	19	560,000	7,500
Schreiner Institute (Jr.), Kerrville, Tex.	1923	J. J. Delaney	351	31	31	175,000	9,800
Scranton, University of, Scranton, Pa.	1888	J. Eugene Gallery	2,610	1,793	113	2,500,000	32,124
Scripps College, Claremont, Calif.	1926	Frederick Hard	217	—	25	1,502,055	36,389
Seattle Pacific College, Seattle, Wash.	1891	Albert A. Lemieux	735	—	35	—	25,000
Seattle University, Seattle, Wash.	1891	C. Hoyt Watson	3,004	1,157	141	—	10,000
Sequoias, College of the, Visalia, Calif.	1925	Ivan C. Crookshanks	751	128	50	—	8,700
Seton Hall College, South Orange, N.J.	1856	John L. McNulty	8,582	3,902	316	—	111,000
Seton Hill College, Greensburg, Pa.	1918	William Granger Ryan	517	26	63	500,000	33,000
Shaw University, Raleigh, N.C.	1865	Robert P. Daniel	802	152	49	385,000	17,000
Shenandoah College, (Jr.), Dayton, Va.	1875	L. P. Hill	183	29	23	57,000	6,000
Shepherd College, Shepherdstown, W.Va.	1872	Oliver S. Ikenberry	660	180	30	—	20,500
Shorter College, Rome, Ga.	1873	Charles W. Burts	319	5	33	555,000	25,000
Siena Heights College, Adrian, Mich.	1919	Mother Mary Gerald	439	4	29	—	28,100
Simmons College, Boston, Mass.	1899	Bancroft Beatley	1,506	118	174	3,653,518	90,000
Simpson College, Indianola, Ia.	1860	Edwin E. Voigt	726	200	45	1,500,000	37,015
Skidmore College, Saratoga Springs, N.Y.	1911	Henry T. Moore	1,131	121	103	878,527	64,338
Smith College, Northampton, Mass.	1871	Benjamin E. Wright	2,330	4	255	8,750,000	359,086
Snead Junior College, Boaz, Ala.	1935	Festus M. Cook	419	82	26	210,000	6,858
Snow College (Jr.), Ephraim, Utah	1888	James A. Nuttall	268	62	24	—	10,200
South, University of the, Sewanee, Tenn.	1857	Boylston Green	573	142	49	2,675,621	64,446
South Carolina, Univ. of, Columbia, S.C.	1801	Norman M. Smith	3,802	1,800	240	75,000	170,000
South Carolina State Agri. and Mech. Col., Orangeburg, S.C.	1896	M. F. Whittaker	1,280	350	150	—	27,000
South Dakota, Univ. of, Vermillion, S.D.	1882	I. D. Weeks	1,762	763	174	—	127,000
South Dakota School of Mines and Technology, Rapid City, S.D.	1885	Warren E. Wilson	600	324	58	100,000	21,000
South Dakota State College of Agri. and Mech. Arts, Brookings, S.D.	1881	Fred H. Leinbach	2,196	843	175	810,336	80,000
Southeastern La. Col., Hammond, La.	1925	Gladney J. Tinsley	1,105	331	97	—	37,134
Southeastern State College, Durant, Okla.	1909	T. T. Montgomery	1,177	459	79	—	38,486
Southeast Missouri St. Col., Cape Girardeau, Mo.	1873	W. W. Parker	1,416	356	65	—	90,000
Southern Calif., Univ. of, Los Angeles, Calif.	1879	Fred D. Fagg, Jr.	22,413	13,438	1,727	2,169,000	500,000
Southern Christian Inst. (Jr.), Edwards, Miss.	1875	John Long	340	8	13	—	5,669
Southern Idaho Col. of Educ., Albion, Ida.	1893	R. H. Snyder	277	79	30	—	20,000
Southern Illinois University, Carbondale, Ill.	1874	Delyte W. Morris	3,164	969	282	—	111,565
Southern Methodist Univ., Dallas, Tex.	1911	Umphrey Lee	6,269	2,818	351	4,359,638	263,091
Southern Missionary Col., Collegedale, Tenn.	1893	Kenneth A. Wright	428	143	40	—	13,347
Southern Oregon Col. of Educ., Ashland, Ore.	1926	Elmo N. Stevenson	785	219	54	—	18,074
Southern St. Tch. Col., Springfield, S.D.	1881	J. Howard Kramer	187	52	22	150,000	25,000
Southern University and Agri. and Mech. College, Scotlandville, La.	1880	Felton G. Clark	2,135	431	120	—	42,593
South Georgia College (Jr.), College, Ga.	1927	William S. Smith	503	101	21	—	8,300
Southwestern at Memphis, Memphis, Tenn.	1848	Peyton N. Rhodes	634	127	70	2,508,373	63,456
Southwestern College, Winfield, Kan.	1885	Alvin W. Murray	557	146	43	585,000	27,500
Southwestern Louisiana Inst., Lafayette, La.	1898	Joel L. Fletcher	2,811	1,004	183	—	81,756
Southwestern State College, Weatherford, Okla.	1901	R. H. Burton	1,044	405	79	—	34,853
Southwestern University, Georgetown, Tex.	1840	William C. Finch	677	170	50	1,020,000	51,000
Southwest Missouri St. Col., Springfield, Mo.	1906	Roy Ellis	1,878	487	92	—	74,610
Southwest Texas State Tch. Col., San Marcos, Tex.	1899	John G. Flowers	2,036	455	100	—	66,000
Spelman College, Atlanta, Ga.	1881	Florence M. Read	378	1	35	3,291,122	101,467
Springfield College, Springfield, Mass.	1885	Paul M. Limbert	1,465	983	91	1,147,706	37,296
Springfield Junior Col., Springfield, Ill.	1929	Mother M. Carmelita Mosley	455	211	30	—	11,900

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Spring Hill College, Spring Hill, Ala.	1830	Wm. Patrick Donnelly	713	111	49	$ 459,177	59,026
Stanford University, Stanford, Calif.	1885	J. E. Wallace Sterling	7,896	210	750	38,424,326	1,221,826
Stephen F. Austin State Tch. Col., Nacogdoches, Tex.	1923	Paul L. Boynton	1,538	3,117	89	—	32,597
Stephens College (Jr.), Columbia, Mo.	1833	Homer P. Rainey	2,183	482	283	250,846	50,000
Stevens Institute of Tech., Hoboken, N.J.	1870	Harvey N. Davis	2,079	—	148	2,265,000	35,000
Stillman College (Jr.), Tuscaloosa, Ala.	1876	Samuel B. Hay	312	1,171	21	100,000	9,400
Stockton College, (Jr.), Stockton, Calif.	1935	Leon P. Minear	3,745	103	173	—	45,000
Stout Institute, Menomonie, Wis.	1903	Verne C. Fryklund	966	415	58	—	32,126
Stowe Teachers and Jr. Col., St. Louis, Mo.	1890	Ruth M. Harris	697	53	40	—	14,980
Sue Bennett College (Jr.), London, Ky.	1896	Oscie Sanders	134	45	16	—	11,228
Sullins College (Jr.), Bristol, Va.	1870	W. E. Martin	365	—	43	500,000	13,000
Sul Ross State Col., Alpine, Tex.	1920	R. M. Hawkins	864	236	55	—	25,000
Sunflower Junior College, Moorhead, Miss.	1911	W. B. Horton	364	21	30	—	6,500
Susquehanna University, Selinsgrove, Pa.	1858	G. Morris Smith	469	164	39	503,254	28,000
Swarthmore College, Swarthmore, Pa.	1864	John W. Nason	955	168	112	9,695,799	154,683
Sweet Briar College, Sweet Briar, Va.	1901	Martha B. Lucas	453	6	60	965,613	70,312
Swift Memorial Jr. Col., Rogersville, Tenn.	1883	R. E. Lee	151	15	12	—	3,300
Syracuse University, Syracuse, N.Y.	1870	William P. Tolley	19,322	8,611	1,509	8,047,637	430,000
T							
Taft Junior College, Taft, Calif.	1922	Joseph P. Cosand, Jr.	280	25	34	—	5,000
Talladega College, Talladega, Ala.	1867	A. D. Beittel	314	48	34	1,188,733	45,000
Tarkio College, Tarkio, Mo.	1883	M. Earle Collins	219	75	19	666,000	19,200
Tarleton State Col. (Jr.), Stephenville, Tex.	1899	E. J. Howell	1,021	125	70	—	33,000
Taylor University, Upland, Ind.	1846	Clyde W. Meredith	553	139	33	100,000	24,773
Temple University, Philadelphia, Pa.	1884	Robert L. Johnson	17,108	8,365	851	1,494,220	307,058
Tennessee, University of, Knoxville, Tenn.	1794	Cloide E. Brehm	8,962	3,956	1,427	640,769	290,298
Tennessee A. and I. St. Col., Nashville, Tenn.	1912	W. S. Davis	2,516	618	172	—	31,525
Tennessee Jr. Col., Univ. of, Martin, Tenn.	1927	Paul Meek	435	80	35	—	16,958
Tennessee Polytechnic Inst., Cookeville, Tenn.	1915	Everett Derryberry	2,269	625	100	—	36,000
Tennessee Wesleyan Col. (Jr.), Athens, Tenn.	1866	James L. Robb	404	86	27	195,050	16,182
Texarkana College (Jr.), Texarkana, Tex.	1927	H. W. Stilwell	606	285	29	—	7,000
Texas, A. and M. Col. of, College Station, Tex.	1871	Frank C. Bolton	7,772	2,899	539	412,993	156,000
Texas, University of, Austin, Tex.	1881	Theophilus S. Painter	15,537	6,746	930	107,292,531	904,410
Texas Christian University, Fort Worth, Tex.	1873	M. E. Sadler	4,611	1,867	255	6,000,000	162,736
Texas College, Tyler, Tex.	1894	D. R. Glass	809	167	41	12,000	12,167
Texas Col. of Arts and Ind., Kingsville, Tex.	1925	Ernest H. Poteet	2,097	578	101	—	42,000
Texas Lutheran College (Jr.), Seguin, Tex.	1891	William F. Kraushaar	341	42	28	17,500	25,000
Texas Southmost College, Brownsville, Tex.	1926	John F. Barron	508	208	32	—	5,008
Texas State Col. for Wom., Denton, Tex.	1901	L. H. Hubbard	2,241	29	142	—	107,000
Texas Technological Col., Lubbock, Tex.	1923	D. M. Wiggins	5,843	1,991	385	—	100,000
Texas Western College of the University of Texas, El Paso, Tex.	1914	Wilson Homer Elkins	2,590	776	135	440,000	55,000
Thiel College, Greenville, Pa.	1866	Wm. F. Zimmerman	653	215	34	212,500	35,000
Thornton Junior College, Harvey, Ill.	1927	James L. Beck	303	27	22	—	9,500
Tillotson College, Austin, Tex.	1877	Fred L. Brownlee	604	107	34	2,218	22,316
Toledo, University of, Toledo, Ohio	1872	Wilbur Wallace White	5,513	2,178	262	68,389	138,574
Toronto, University of, Toronto, Ont., Can.	1827	Sidney E. Smith	13,908	4,492	1,506	—	651,816
Tougaloo College, Tougaloo, Miss.	1869	Harold C. Warren	360	74	31	45,500	17,870
Transylvania College, Lexington, Ky.	1780	Raymond F. McLain	453	172	39	740,428	43,775
Trinity College, Hartford, Conn.	1823	G. Keith Funston	1,261	225	105	4,000,000	220,000
Trinity College, Washington, D.C.	1897	Sr. Catherine Dorothea	483	—	61	533,846	51,000
Trinity University, San Antonio, Tex.	1869	Monroe G. Everett	1,269	507	99	328,883	41,000
Tufts College, Medford, Mass.	1852	Leonard Carmichael	3,582	1,545	895	9,904,304	200,000
Tulane Univ. of Louisiana, New Orleans, La.	1834	Rufus C. Harris	6,769	2,783	853	13,918,274	331,712
Tulsa, University of, Tulsa, Okla.	1894	C. I. Pontius	4,898	1,602	185	1,573,836	68,035
Tusculum College, Greeneville, Tenn.	1794	Geo. K. Davies	331	102	24	1,513,000	25,000
Tuskegee Institute, Tuskegee Institute, Ala.	1881	Frederick D. Patterson	2,301	1,154	220	7,729,611	80,000
Tyler Junior College, Tyler, Tex.	1926	H. E. Jenkins	1,149	70	48	—	8,132
U							
Union College, Barbourville, Ky.	1879	Conway Boatman	502	190	27	595,651	19,845
Union College, Lincoln, Neb.	1891	Robert W. Woods	776	200	55	—	44,000
Union College, Schenectady, N.Y.	1795	Carter Davidson	1,786	719	145	6,500,000	140,000
Union University, Jackson, Tenn.	1834	Warren F. Jones	847	174	31	523,966	23,197
U.S. Coast Guard Acad., New London, Conn.	1876	W. N. Derby	430	—	55	—	32,600
U.S. Military Academy, West Point, N.Y.	1802	Bryant E. Moore	2,496	—	265	—	136,000
U.S. Naval Academy, Annapolis, Md.	1845	J. L. Holloway, Jr.	3,453	—	504	—	121,000
Upsala College, East Orange, N.J.	1893	Evald B. Lawson	1,850	750	95	250,000	30,000
Ursinus College, Collegeville, Pa.	1869	Norman E. McClure	946	321	58	797,106	39,044
Ursuline College, Louisville, Ky.	1938	Mother M. Rosalin Schaeffer	258	—	29	—	19,230
Ursuline Col. for Women, Cleveland, Ohio	1871	Mother M. Celestine	223	—	34	—	20,000
Utah, University of, Salt Lake City, Utah	1850	A. Ray Olpin	9,235	—	604	$ 341,085	225,000
Utah State Agricultural Col., Logan, Utah	1888	Franklin S. Harris	4,252	2,030	366	—	130,000
V							
Vallejo College (Jr.), Vallejo, Calif.	1945	George P. Chaffey	1,600	151	75	—	7,558
Valparaiso University, Valparaiso, Ind.	1859	O. P. Kretzmann	2,060	720	138	451,395	91,002
Vanderbilt University, Nashville, Tenn.	1873	Harvie Branscomb	3,397	993	475	31,255,787	539,726
Vanport Extension Center, Portland, Ore.	1946	Stephen E. Epler	1,621	410	60	—	4,396
Vassar College, Poughkeepsie, N.Y.	1861	Sarah G. Blanding	1,370	15	195	16,000,000	266,727
Ventura Junior College, Ventura, Calif.	1929	D. R. Henry	1,418	129	75	—	17,693
Vermont, University of, and State Agricultural Col., Burlington, Vt.	1791	Elias Lyman	3,248	1,304	283	3,822,000	200,000
Vermont Junior College, Montpelier, Vt.	1834	Ralph Edward Noble	250	59	22	132,185	6,000
Villa Maria College, Erie, Pa.	1925	Mother M. Aurelia	300	8	33	1,000,000	17,000
Villanova College, Villanova, Pa.	1842	F. X. N. McGuire	5,593	1,043	205	4,244,352	83,176
Virginia, University of, Charlottesville, Va.	1819	Colgate W. Darden, Jr.	4,740	2,406	774	14,000,000	514,900
Virginia Intermont College (Jr.), Bristol, Va.	1884	Rabun L. Brantley	460	—	35	518,000	13,000
Virginia Junior College, Virginia, Minn.	1921	Floyd B. Moe	200	38	25	—	20,000
Virginia Military Institute, Lexington, Va.	1839	R. J. Marshall	845	109	77	957,294	84,664
*Virginia Polytechnic Inst., Blacksburg, Va.	1872	Walter S. Newman	5,546	3,262	332	349,312	123,009
Virginia State College, Petersburg, Virginia	1882	James H. Johnston	1,347	274	122	173,000	44,619
Virginia Union University, Richmond, Va.	1865	John M. Ellison	944	246	52	978,208	21,257
Voorhees School and Junior College, Denmark, S.C.	1897	Earl H. McClenney, Sr.	292	34	20	50,000	4,430
W							
Wabash College, Crawfordsville, Ind.	1832	Frank H. Sparks	594	147	54	2,709,000	100,000
Wagner College, Staten Island, N.Y.	1883	Walter C. Langsam	1,506	735	95	420,000	33,000
Wake Forest College, Wake Forest, N.C.	1834	Thurman D. Kitchin	2,172	876	179	4,520,103	109,092
Waldorf College (Jr.), Forest City, Ia.	1903	Morton O. Nilssen	331	39	30	65,000	7,500
Walla Walla College, College Place, Wash.	1892	G. W. Bowers	1,259	350	60	—	31,749
Ward-Belmont School (Jr.), Nashville, Tenn.	1865	Robert C. Provine	656	—	68	—	13,790
Washburn Municipal Univ., Topeka, Kan.	1865	Bryan S. Stoffer	1,962	719	120	1,500,000	68,000
Washington, State Col. of, Pullman, Wash.	1890	Wilson Compton	6,169	2,323	461	15,838,260	600,000
Washington, University of, Seattle, Wash.	1861	Raymond B. Allen	16,380	8,002	1,010	2,768,563	665,000
Washington and Jefferson Col., Wash., Pa.	1780	C. D. Dieter	905	332	70	1,423,521	72,000
Washington and Lee Univ., Lexington, Va.	1749	Francis P. Gaines	1,239	360	87	5,225,409	160,283
Washington College, Chestertown, Md.	1782	F. G. Livingood	485	161	33	75,000	35,000
Washington Missionary Col., Takoma Pk., Washington, D.C.	1904	W. H. Shephard	644	158	46	—	34,669
Washington University, St. Louis, Mo.	1853	Arthur H. Compton	13,279	5,590	1,431	24,000,000	625,000
Wayne University, Detroit, Mich.	1868	David D. Henry	20,257	6,795	858	5,025	355,000
Weatherford Col. (Jr.), Weatherford, Tex.	1868	L. B. Plummer	222	25	15	25,960	7,728
Weber College (Jr.), Ogden, Utah.	1889	H. A. Dixon	2,497	986	75	—	18,000
Webster College, Webster Groves, Mo.	1915	Sister Mariella Collins	502	—	56	—	27,500
Wellesley College, Wellesley, Mass.	1870	Margaret Clapp	1,711	—	210	15,450,234	261,108
Wells College, Aurora, N.Y.	1868	Richard L. Greene	309	—	50	1,663,416	106,000
Wenatchee Junior College, Wenatchee, Wash.	1939	Paul Furgeson	394	32	25	—	3,127
Wentworth Mil. Acad. (Jr.), Lexington, Mo.	1880	J. M. Sellers	175	9	16	—	8,350
Wesleyan College, Macon, Ga.	1836	Silas Johnson	514	10	66	1,521,539	37,276
Wesleyan University, Middletown, Conn.	1831	Victor L. Butterfield	912	195	95	9,415,641	370,000
Westbrook Junior College, Portland, Me.	1831	Milton D. Proctor	377	—	34	73,466	8,280
Western Carolina Tch. Col., Cullowhee, N.C.	1889	Paul R. Reid	608	230	40	—	23,475
Western College (for Women), Oxford, Ohio.	1853	Philip E. Henderson	439	—	56	870,272	46,382
Western Illinois State Col., Macomb, Ill.	1899	Frank A. Beu	1,544	364	117	—	67,085
Western Kentucky State Tch. Col., Bowling Green, Ky.	1906	Paul L. Garrett	1,962	601	110	—	78,000
Western Maryland Col., Westminster, Md.	1868	Lowell Skinner Ensor	847	187	64	900,000	48,500
Western Michigan College of Education, Kalamazoo, Mich.	1903	Paul V. Sangren	5,032	1,323	275	—	70,000
Western Montana College of Education, Dillon, Mont.	1893	Rush Jordan	276	74	25	—	23,544
Western Ontario, Univ. of, London, Ont., Can.	1878	G. Edward Hall	4,626	750	336	1,000,000	185,000
Western Reserve Univ., Cleveland, Ohio	1826	John Schoff Millis	12,753	5,005	880	17,159,230	647,903
Western State Col. of Colo., Gunnison, Colo.	1901	Peter P. Mickelson	655	231	57	—	39,594
Western Washington College of Education, Bellingham, Wash.	1899	Wm. W. Haggard	1,534	490	91	—	74,372
West Georgia College (Jr.), Carrollton, Ga.	1933	I. S. Ingram	510	96	22	—	11,823
West Liberty State Col., W. Liberty, W.Va.	1837	Paul N. Elbin	800	169	34	—	21,470
Westminster College, Fulton, Mo.	1851	William W. Hall, Jr.	556	172	34	700,000	35,000

Institution and Location	Year Founded	Chief Executive	Total Students	Students under Veterans' Program	Faculty	Endowment	Bound Library Volumes
Westminster College, New Wilmington, Pa.	1852	Will W. Orr	1,142	338	76	$ 925,000	39,000
Westminster College, Salt Lake City, Utah.	1875	Robert D. Steele	318	78	27	150,000	14,500
Westminster College (Jr.), Tehuacana, Tex.	1895	William C. Finch	70	13	10	—	7,063
West Texas State Col., Canyon, Tex. . . .	1910	James P. Cornette	2,008	476	100	—	56,463
West Virginia State Col., Institute, W.Va. .	1891	John W. Davis	1,458	492	81	—	34,713
West Virginia Univ., Morgantown, W.Va. .	1867	Irvin Stewart	6,357	2,717	433	115,300	202,167
West Virginia Wesleyan Col., Buckhannon, W.Va.	1890	W. J. Scarborough	927	264	40	250,000	34,000
Wheaton College, Norton, Mass.	1834	A. Howard Meneely	510	—	68	1,260,000	65,384
Wheaton College, Wheaton, Ill.	1860	V. Raymond Edman	1,602	317	148	800,000	96,000
Wheelock College, Boston, Mass.	1889	Winifred E. Bain	374	2	21	—	13,000
Whitman College, Walla Walla, Wash. .	1859	Chester C. Maxey	780	201	53	1,480,000	81,700
Whittier College, Whittier, Calif.	1901	William C. Jones	1,374	576	64	1,048,000	54,230
Whitworth College, Spokane, Wash. . . .	1890	Frank F. Warren	767	223	48	45,000	20,000
Wichita, Municipal Univ. of, Wichita, Kan. .	1926	Harry F. Corbin	3,390	1,266	200	92,848	84,241
Wilberforce University, Wilberforce, O. .	1856	Charles Leander Hill	419	123	31	75,000	30,000
Wiley College, Marshall, Tex.	1873	J. S. Scott	633	140	37	600,000	21,000
Wilkes College, Wilkes-Barre, Pa.. . . .	1933	Eugene S. Farley	1,929	518	79	530,306	19,000
Willamette University, Salem, Ore.. . . .	1842	G. Herbert Smith	1,169	38	84	2,172,743	50,000
William and Mary, Col. of, Williamsburg, Va.	1693	John Edwin Pomfret	1,927	536	135	2,045,037	206,791
William and Mary, Col. of, and Virginia Polytech. Inst. in Norfolk (Jr.), Norfolk, Va.	1930	Lewis W. Webb, Jr.	1,431	432	87	—	17,017
William Jewell Col., Liberty, Mo.	1849	Walter Pope Binns	589	171	40	2,389,000	64,158
Williams College, Williamstown, Mass. . .	1793	James P. Baxter, III	1,127	186	124	13,176,781	200,258
William Woods College (Jr.), Fulton, Mo. .	1890	H. L. Smith	356	—	39	575,000	15,000
Willimantic St. Tch. Col., Willimantic, Conn.	1889	J. Eugene Smith	518	48	49	—	15,400
Wilmington College, Wilmington, Ohio . .	1870	Samuel D. Marble	535	177	40	500,000	25,000
Wilson College, Chambersburg, Pa. . . .	1869	Paul Swain Havens	436	3	54	1,068,923	60,000
Winona State Tch. Col., Winona, Minn. . .	1858	Nels Minné	643	202	55	—	41,000
Winston-Salem Tch. Col., Winston-Salem, N.C..	1892	Francis L. Atkins	463	67	30	100,000	26,516
Winthrop College, Rock Hill, S.C.	1886	Henry R. Sims	1,276	5	129	—	78,861
Wisconsin, University of, Madison, Wis. . .	1848	Edwin Broun Fred	22,054	7,676	1,811	$ 4,366,536	1,340,000
Wisconsin State Tch. Col., Eau Claire, Wis. .	1915	W. R. Davies	917	194	60	—	30,000
Wisconsin State Tch. Col., LaCrosse, Wis.. .	1909	Rexford S. Mitchell	1,138	255	76	—	39,629
Wisconsin State Tch. Col., Milwaukee, Wis. .	1880	J. Martin Klotsche	1,794	396	113	—	63,598
Wisconsin State Tch. Col., Oshkosh, Wis. . .	1871	Forrest R. Polk	932	222	57	—	43,350
Wisconsin State Tch. Col., Platteville, Wis. .	1866	C. O. Newlun	972	208	57	—	32,000
Wisconsin State Tch. Col., River Falls, Wis. .	1874	E. H. Kleinpell	901	256	59	—	30,000
Wisconsin State Tch. Col., Stevens Point, Wis.	1894	W. C. Hansen	1,354	252	62	—	46,432
Wisconsin State Tch. Col., Superior, Wis. .	1896	Jim Dan Hill	1,064	264	70	—	38,961
Wisconsin State Tch. Col., Whitewater, Wis.	1868	R. C. Williams	780	208	67	—	39,553
Wittenberg College, Springfield, Ohio . .	1845	C. C. Stoughton	1,307	425	87	2,322,740	84,357
Wofford College, Spartanburg, S.C. . . .	1854	W. K. Greene	581	240	49	911,138	45,904
Woodstock College and Seminary, Woodstock, Md.	1867	F. C. Wheeler	302	—	55	—	115,000
Wooster, College of, Wooster, Ohio . .	1866	Howard F. Lowry	1,225	187	98	3,710,548	110,320
Worcester Polytechnic Inst., Worcester, Mass.	1865	Wat T. Cluverius	807	336	95	4,638,123	40,000
Wyoming, University of, Laramie, Wyo.. .	1886	G. D. Humphrey	3,421	1,367	330	4,556,715	150,000
X							
Xavier University, Cincinnati, Ohio	1831	James F. Maguire	3,155	1,145	131	237,965	94,332
Xavier University, New Orleans, La. . . .	1925	Mother M. Agatha	1,048	347	88	646,984	57,497
Y							
Yakima Valley Jr. Col., Yakima, Wash. . .	1928	H. A. Hoeglund	364	57	24	—	7,500
Yale University, New Haven, Conn. . . .	1701	Charles Seymour	8,519	3,028	1,483	129,599,341	3,877,273
Yankton College, Yankton, S.D.	1881	James C. Graham	396	122	33	720,615	3,000
Yeshiva University, New York, N.Y. . . .	1897	Samuel Belkin	1,500	25	152	1,400,000	103,692
*Young L. G. Harris Col. (Jr.), Young Harris, Ga.	1886	W. L. Downs	230	30	17	150,000	12,463
Youngstown College, Youngstown, Ohio. .	1908	Howard W. Jones	4,596	2,341	240	18,000	47,100
Yuba College (Jr.), Marysville, Calif. . . .	1927	J. J. Collins	630	100	35	—	15,000

Uranium. The major sources of supply of uranium in the past were the Belgian Congo and Canada, with small amounts from the United States, Czechoslovakia and Portugal. With the development of the atomic bomb there developed a new incentive for a world-wide search for uranium ores. In such a widespread program, favourable results could be expected in only a relatively few locations, but no definite information was available during 1949 on the findings. A number of new locations were reported, but for security reasons little detailed information was made public.

Previous to the discovery of the rich ores of the Belgian Congo, small amounts of radium ores were mined in the United States, and from these uranium was recovered as a by-product. The Colorado plateau area of Colorado, Utah and Arizona had supplied moderate tonnages of low grade vanadium-uranium-radium ores since the early 1930s. Prospecting and new development were active in this area, and late in 1949 it was reported that there were about 300 mines in operation, employing 1,000–1,200 miners and supplying ore to six treatment plants. Other areas of Arizona also made marked progress, and at midyear of 1949 ore production was estimated at 200 tons per day.

To stimulate the prospecting program in the United States, a price of $3.50 per pound of uranium oxide was guaranteed, supplemented by a bonus of $10,000 to any operator who delivered as much as 20 tons of concentrates of at least 20% of uranium oxide from any single claim not previously operated. (*See* also ATOMIC ENERGY; CHEMISTRY; PHYSICS.)

(G. A. Ro.)

Urology. Elimination or control of systemic sources of the male sex hormone was found to be the best method of treating carcinoma of the prostate gland. The two methods which had been employed for this purpose were castration and the administration of estrogenic substances. A review of a large number of cases in which prostatic cancer was treated by these methods over a period of more than five years showed that the two methods were of equal therapeutic value; it also showed that such treatment was palliative only and not curative. Estrogenic treatment was followed by most clinicians, a somewhat larger dosage being used than was originally employed.

Although radical perineal prostatectomy for cancer of the prostate gland had been advocated by a number of urologic surgeons, only during 1949 was a large number of patients followed over a postoperative period long enough to give the operation statistical appraisal. Judging from a report from the records of the Johns Hopkins hospital, this procedure had definite clinical advantages over other methods of treatment as far as survival was concerned. According to the report, more than 51% of the patients with tumours believed to be completely confined to the prostate on rectal examination lived five years or longer without recurrence and without castration or estrogen. Among the patients who underwent operation from 10 to 27 years previously, 28% were living still and without demonstrable cancer. No reports of any other method of treatment had equalled these statistics. Unfortunately, however, in only 11% of the cases had cancer of the prostate gland observed clinically been found amenable to radical perineal prostatectomy.

Successful transplantation of human prostatic cancer into guinea pigs through 16 successive generations was reported. Animals susceptible to cancer were not selected. Transplantation of prostatic cancer to the castrated male animal was unsuccessful, and testicular androgen was necessary to initiate growth.

The availability of a chemical test for measuring 17-ketosteroids in the urine stimulated more general interest and research in the field of urinary hormonal assays. Tests for measuring estrogens and the glycogenic adrenal corticoids gave promise of more widespread clinical acceptance.

Experience with isotonic solutions such as 5% solution of glucose for irrigation of the bladder during transurethral operations on the prostate gland showed that haemolysis could be prevented. Deaths following transurethral resection may be due to haemolysis with an oliguric syndrome, and the mortality rate had been materially lowered by substituting glucose solutions as an irrigating agent in the place of sterile water.

Experience with several new antibiotic solutions, including aureomycin and chloromycetin, showed their comparative merit in combating infections of the urinary tract. Aureomycin was found to be efficacious in combating certain types of bacteria found with urinary infection which had resisted other antibiotics and sulfonamides. Included among the bacteria in this group were *Escherichia coli, Aerobacter aerogenes, Proteus vulgaris* and certain species of staphylococcis, but not pseudomonas. Although aureomycin may cause moderate gastro-intestinal upset, it has the advantages that it can be administered orally and is not toxic in the sense of causing serious anaphylactic reaction or systemic damage such as those occurring with other antibiotics. Chloromycetin was found to possess antibacterial properties similar to those of aureomycin and also to cause minimal systemic reaction. By changing the methods of administering sulfonamides the incidence of sensitization may be materially reduced. This was achieved by combining several different sulfonamide drugs with minimal dosage of each drug.

Experience in the treatment of gonococcal infection showed that best results were attained by one or two intramuscular injections of 300,000 units of penicillin G in sesame oil. (*See* also VENEREAL DISEASES.)

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Uruguay. A republic in southeastern South America, Uruguay is bounded on the north by Brazil, on the south by the Río de la Plata, on the east by the Atlantic ocean and on the west by Argentina. It is the smallest country in South America with an area of 72,172 sq.mi. It has a population of 2,330,000 (mid-1948 est.), mostly of European extraction. Montevideo, the capital, has 850,000 inhabitants (1947 est.). Other leading cities are Paysandú (50,000); Salto (48,000); Mercedes (33,000); and Minas (32,000). Religion: Christian, mostly Roman Catholic. President in 1949: Luis Batlle Berres.

History.—During 1949 Uruguayan relations with Argentina remained strained and the dollar shortage continued. At the inter-American regional conference of the International Labour organization held in Montevideo April 25 to May 7, President Batlle Berres in his opening address said that social justice without civil liberty was a lie and, what was serious, it was a dangerous lie. Diplomatic circles considered this an allusion to Pres. Juan D. Perón of Argentina and his governmental system. A resolution was adopted citing violation of workers' rights in Peru and Venezuela.

Relations with Argentina were strained further when in mid-June a small bomb was thrown into the Uruguayan embassy in Buenos Aires. The Peronista newspaper *Democracia* criticized Uruguayan Ambassador Roberto MacEachen for his willingness to give refuge to Agustín Rodríguez Araya, who had been expelled from the Argentine chamber of deputies.

In May Antonio Richero, a Communist, was expelled from the chamber of deputies for insulting a member of the Brazilian cabinet, who was visiting Uruguay. In June Nilo R. Berchessi was appointed finance minister, thus ending a five-day cabinet crisis.

In August the Junta Americana de Defensa de la Democrácia, under the chairmanship of Juan Andrés Ramírez, and with former presidents Rómulo Gallegos of Venezuela and Eduardo Santos of Colombia among its members, was formed as a "rallying point for democratic forces in Latin America." Earlier, in conjunction with Guatemala, Uruguay asked the United Nations to investigate violations of human rights by the Venezuelan junta.

In May the government utility monopoly announced a $58,000,000 hydroelectric development program, and in October a loan for power development was concluded with the International Bank for Reconstruction and Development. Through the summer the peso declined steadily, 10% in June alone. Wool was withheld from the market in hopes of more favourable exchange rates, since the price had dropped 25%. In October, following Argentina's lead, the peso was devalued. The new buying rate was fixed at 1.519 pesos to the dollar and the selling rate at 1.90 to the dollar. Other rates for special trade items were established.

In July a three-month, $16,000,000 trade pact was signed with Italy. It provided exchanging animal products for Italian heavy manufactures. The United States was severely criticized because the U.S. army awarded an Argentine firm a contract for supplying canned meat to Europe when originally Uruguay had been the lowest bidder. The army explained that the Uruguayan firm could not meet all the requirements and, that under the new conditions, the Argentines were the lowest bidders.

(J. McAD.)

Education.—In 1947 there were 1,635 public schools with 192,804 pupils. Rural schools were attended by 52,000 students. University education is available at the University of Montevideo.

Finance.—The monetary unit is the peso, valued at $0.5263 U.S. currency, controlled rate, on Dec. 1, 1949. The budget for the fiscal year 1949 estimated revenue at 204,464,802 pesos and expenditure at 223,250,588 pesos. The funded public debt (Dec. 31, 1948) amounted to 760,200,000 pesos, of which 637,700,000 were internal and 122,500,000 external. Notes in circulation on Sept. 30, 1949, totalled 229,500,000 pesos. Bank deposits averaged 384,300,000 pesos in Sept. 1949; gold holdings of the Bank of the Republic totalled $161,000,000 on Aug. 31, 1949.

Trade and Communications.—Exports in 1948 totalled $178,955,000; imports were $201,458,000. Chief exports were wool (37%), meat (25%), linseed, linseed oil and linseed oil cake (13%) and hides and skins (12%). Chief imports were machinery and vehicles (28%), textile fibres and cloth (8%), petroleum and products (6%) and sugar (4%). The leading customers were the U.S. (28%), the United Kingdom (18%), Belgium (9%), the Netherlands (7%) and Italy (7%); the leading suppliers were the U.S. (34%), the United Kingdom (13%), Brazil (10%) and Argentina (8%).

Railways (1948) totalled 1,874 mi. The highway system (1948) comprised 26,000 mi., of which 3,051 mi. were paved. Automobiles numbered 50,100 on Dec. 31, 1947. According to *Lloyd's Register of Shipping*, the merchant marine had 43 steamers and motorships (100 tons or more) aggregating 63,062 gross tons on June 30, 1948. Air service was supplied by eight international air lines and two local companies in 1949. Telephones numbered 71,732 and radio sets about 230,000 on Dec. 31, 1947.

Agriculture.—Major crops in the crop year 1948–49 (in short tons) included wheat 571,323; linseed 128,700; oats 56,211; malt barley 18,770; ordinary barley 9,582.

Official estimates (May 1946) showed 6,834,000 cattle and 19,567,000 sheep. Wool exports in the year 1948–49 (Oct. 1–Sept. 30) totalled 118,237 bales (1947–48: 153,267 bales), of which 65,549 bales went to the U.S., 13,803 bales to Italy and 12,365 bales to western Germany. Meat exports in 1948 totalled 64,868 short tons, including 39,961 tons of frozen beef, 18,469 tons of canned meat and 3,733 tons of frozen mutton. In 1948, 22,833 short tons of cattle hides and 10,322 tons of sheepskins were exported.

Manufactures.—The estimated values added by manufacture (exclusive of the cost of raw materials) of the leading industrial products in 1947 were: food products 62,000,000 pesos; textiles 35,000,000 pesos; beverages 35,000,000 pesos; metal products 27,000,000 pesos; stone, sand, cement and clay products 16,000,000 pesos; and clothing 15,000,000 pesos. There are four *frigoríficos;* the three Montevideo *frigoríficos* treated 475,280 cattle, 406,570 sheep and 70,115 pigs in 1948. There were about 115 textile mills in 1948, with an estimated total capital of 105,000,000 pesos and employing about 15,000 workers. The cost-of-living index for Montevideo stood at 192 in Aug. 1949 (1937 = 100).

Mineral Production.—Activity is limited to the extraction of semiprecious stones (exports 1948: 78 short tons) and construction materials.

U.S.S.R.: *see* UNION OF SOVIET SOCIALIST REPUBLICS.

Utah. A Rocky Mountain state, admitted to the union in 1896, Utah is popularly known as the "Beehive state." Area:

84,916 sq.mi. (82,346 sq.mi. land, 2,570 sq.mi. water); pop.: (est. 1949) 682,000; (U.S. census 1940) 550,310. The rural nonfarm population was 150,645 in 1940, farm 94,352; urban 305,493, with the following origins: white (native) 510,662; (foreign-born) 32,298; Negro (native) 1,225; (foreign-born) 10. Capital: Salt Lake City (pop. est. 1948, 210,000). Other principal cities with 1948 est. pop.: Ogden (63,000), Provo (29,000), and Logan (16,000). In 1948, the Mormon Church gave its membership as 1,016,170, and of that number 484,890 were residents of Utah and 175,367 of Salt Lake City.

History.—The chief officers of Utah in 1949 were J. Bracken Lee, governor; Heber Bennion, Jr., secretary of state; Reese M. Reese, auditor; Ferrell H. Adams, treasurer; Clinton D. Vernon, attorney-general; E. Allen Bateman, superintendent of public instruction.

During 1949 the chief news event in Utah was the disastrous winter, during which storms and blizzards blocked highways, marooned motorists, caused deaths by freezing and snowslides, closed schools and destroyed many range livestock. The financial damage to stockmen and transportation companies ran into many millions of dollars.

The year was also marked by the fight of economy-minded Governor J. Bracken Lee to reduce expenditures in the state. The governor began to fulfill his campaign promises by vetoes of appropriations but the major check came when he slashed $3,800,000 out of a $52,256,000 general appropriations bill. This action resulted in the handing down of a number of legal opinions and a court case which invalidated some of the item vetoes. In a compromise the Republican governor and his Democratic officers and legislature agreed that the disputed amounts would not be spent, but this understanding did not cover a $20,000 item of the state department of education which was still a subject of dispute at the end of the year.

The year also marked definite progress in the development of the Colorado river basin. A 1948 agreement dividing the water among the five upper division states was finally ratified by the legislatures of the states and the congress of the United States and signed by the president. The United States reclamation bureau suggested an upper basin long-term storage plan which was tentatively approved by the interested states, and these same states reached an agreement on initial participating projects.

Education.—There were 151,465 children of school age in Utah in Oct. 1948. From July 1948 to July 1949 the average daily attendance at school was 136,943 out of an enrolment of 150,586. The total cost of education for the fiscal year July 1948–July 1949, was $38,491,957.61 of which $25,143,846.05 was for operating expenses. There were 4,570 teachers and 436 principals.

Social Insurance and Assistance, Public Welfare and Related Programs.—Total expenditures for public assistance during the fiscal year July 1948–July 1949 amounted to $12,740,103.45, an increase of $1,260,940.53 or 11% over the preceding year. The funds were distributed as follows: old-age assistance $6,065,073.13; aid to dependent children $4,154,579.70; aid to the blind $126,577.18; aid to unemployables $1,086,738.61; aid to employables $302,159.30; other assistance $477,601.76; and administration $527,373.77. The number of persons receiving public assistance rose from 25,750 as of June 1948 to 27,690 as of June 1949, an increase of 7.5%, and the average grant per person rose during the same period from $35.03 to $36.28.

The 1947 legislature fixed the amount of "budgetary needs" for recipients of public assistance at not to exceed (per month) $45 for a one-person case, $90 for a two-person case, $114 for a three-person case and $15 per person for each additional person beyond three in a case, with an over-all maximum of $175 for any case. By Nov. 1949 the budgetary needs had been adjusted to $50 (per month) for a one-person case, $85 for a two-person case, $114 for a three-person case and $15 per person for each additional person beyond three in a case, with an over-all maximum of $175 for any case.

Communications.—On July 1, 1949, there were 28,137.2 mi. of roads maintained in Utah of which 18,732.7 mi. were improved and 9,404.5 mi. were unimproved. Motor vehicle registration had reached 217,221 by Oct. 1, 1949, and registration receipts by June 30, 1949, were $2,847,709.42. Receipts from the motor fuel tax were $6,903,788.78. For the fiscal year ending June 30, 1949, state highway expenditures amounted to $11,320,844.21 of which $5,017,832.29 were federal co-operative grants. The state distributed $1,731,711.05 to cities and counties from motor-vehicle registration receipts for expenditure on local roads.

There were 60 bus companies operating in the state in July 1949 and the 9 railroads operating had a combined mileage of 2,116.37. The number of civil airports (excluding emergency air fields) recognized by the CAA had reached 36 by July 1949 and 4 regularly scheduled air lines were serving these airports. At this date also there were 181,155 telephones in service with a total telephone mileage of 398,759.2 and a total telegraph line mileage of 15,531.09. There were 19 standard AM radio stations, 3 FM stations, and 2 television stations by July 1949.

Banking and Finance.—The 55 banks, 44 state and 11 national, had total assets of $585,086,175.87 on Nov. 1, 1949, and total bank deposits of $547,183,655.53. On Dec. 31, 1948, the 13 state-chartered savings, building and loan associations had aggregate assets of $43,320,633.39. Also on Dec. 31, 1948, the 55 licensed small-loan companies had total assets of $8,011,536.03 as compared with the previous year's figures of 52 companies with assets of $7,328,519.13.

State receipts for the year ending June 30, 1948, were $72,782,544; expenditures were $71,668,282.54.

Agriculture.—The cash farm income rose from $155,442,000 for 1947 to $164,360,000 for 1948 with cash receipts from livestock and livestock products increasing from $103,723,000 to $109,777,000 and receipts from crops increasing from $51,719,000 to $54,583,000. Preliminary figures showed that in 1949 the state had 571,000 head of cattle, 113,000 milk cows, 98,000 hogs and pigs, 1,456,000 sheep and lambs, 61,000 horses, 3,079,000 chickens and 52,000 turkeys.

Table I.—*Principal Agricultural Products of Utah*

Crop	1949	1948	Average, 1938–47
Wheat, bu.	9,440,000	8,695,000	6,273,000
Barley, bu.	6,063,000	5,500,000	4,995,000
Oats, bu.	2,115,000	1,764,000	1,848,000
Potatoes, bu.	3,003,000	3,171,000	2,579,000
Sugar beets, tons	462,000	427,000	577,000
Hay (tame and wild), tons	1,219,000	1,134,000	1,141,000
Apples, bu.	428,000	450,000	477,000
Peaches, bu.	778,000	821,000	736,000
Tomatoes (processing) tons	83,000	71,000	
Celery, crates	320,000	273,000	

Manufacturing.—Preliminary reports showed that for 1949 employment in Utah averaged 129,000 per month with an estimated annual pay roll of $343,000,000 as compared with 1948 figures of 124,355 employed per month and an annual pay roll of $330,504,403. There were 12,336 firms in the state employing 1 or more workers, and of that figure only 8 companies employed 1,000 or more workers with 2,709 companies employing 1 person each.

Table II.—*Principal Industries of Utah*

Industry	Pay roll, 1948	Av. workers per month
Mining	$ 46,658,607	12,574
Contract construction	34,842,604	11,207
Primary metal industries	29,242,801	8,498
Transportation, communications and utilities	27,490,745	10,130
Food and food products	20,006,917	8,203
Printing and allied industries	6,014,613	2,050
Products of petroleum and coal	4,677,962	1,207
Stone, clay, and glass products	4,407,514	1,468
Fabricated metal products	2,932,548	963
Chemicals and allied products	2,473,810	802
Other industries	9,962,760	4,358
Total (all Industries)	$330,504,403	124,355

Mineral Production.—As a result of drastic reductions in the price of lead most of the producing mines at Park City were forced to close during the summer of 1949 and only a few continued curtailed production. By Jan. 1, 1950, Governor J. Bracken Lee had advised the miners of that district to seek employment elsewhere in view of low metal prices. The decline in output of ore in the state in 1949 with accompanying heavy losses of copper, gold and molybdenum could also be traced to a labour strike which closed the open-pit mine of the Kennecott Copper corporation in Bingham Canyon from Oct. 24, 1948, to Feb. 7, 1949.

Table III.—*Principal Mineral Production in Utah*

Mineral	1949	1948	1947
Gold, oz.	305,750	371,155	421,662
Silver, oz.	6,709,000	7,979,000	7,780,032
Copper, lb.	384,140,000	453,842,000	533,066,000
Lead, lb.	103,170,000	112,150,000	99,396,000
Zinc, lb.	78,730,000	82,450,000	87,346,000

(B. D. M.)

Utilities, Public: *see* PUBLIC UTILITIES.

Vanadium: *see* MINERAL AND METAL PRODUCTION AND PRICES.

Vandenberg, Arthur Hendrick (1884–), U.S. senator, was born March 22 in Grand Rapids, Mich. He studied at the University of Michigan law school, Ann Arbor, Mich., for a year, then joined the *Grand Rapids Herald* as a reporter, becoming in time that paper's editor and general manager. He was appointed to fill a U.S. senate vacancy in 1928, and was re-elected in 1934, 1940 and 1946. Vandenberg was a noninterventionist up to the time the U.S. became involved in World War II, but generally throughout the war he supported the administration's foreign policies, and in 1945 Pres. Franklin D. Roosevelt appointed him a delegate to the organization conference of the United Nations in San Francisco, Calif. When the Republicans gained control of the senate in 1946, he was named president pro tempore, but after the Democrats regained control in 1948 he continued to exemplify the bipartisan foreign policy as Republican leader of the senate foreign relations committee. Throughout 1948 he was regarded as a leading "dark horse" candidate for the Republican presidential nomination, but at the convention was not actually a strong challenger.

In 1949 Vandenberg lent his full support to the bipartisan effort to pass through the senate the North Atlantic treaty and the program for giving military assistance to the countries joining in that treaty. In February he gave his full endorsement to Pres. Harry Truman's request for $5,580,000,000 for the second year of the European Recovery program. On May 7 President Truman awarded him the annual Collier's Congressional award for distinguished service. On only one point of administration foreign policy was Vandenberg especially critical: he scored the administration's policy in China as a "tragic failure."

Varnishes: *see* Paints and Varnishes.

Vatican City State.

This sovereign independent state was established by the Lateran treaty between the Holy See and the Italian government on Feb. 11, 1929. The treaty is recognized in international law, and the reigning pope is the sovereign. The area of Vatican City is 108.7 ac., excluding the papal estate of Castel Gandolfo and certain basilicas in Rome which are extraterritorial. Executive powers are exercised by the governor, responsible to the pope.

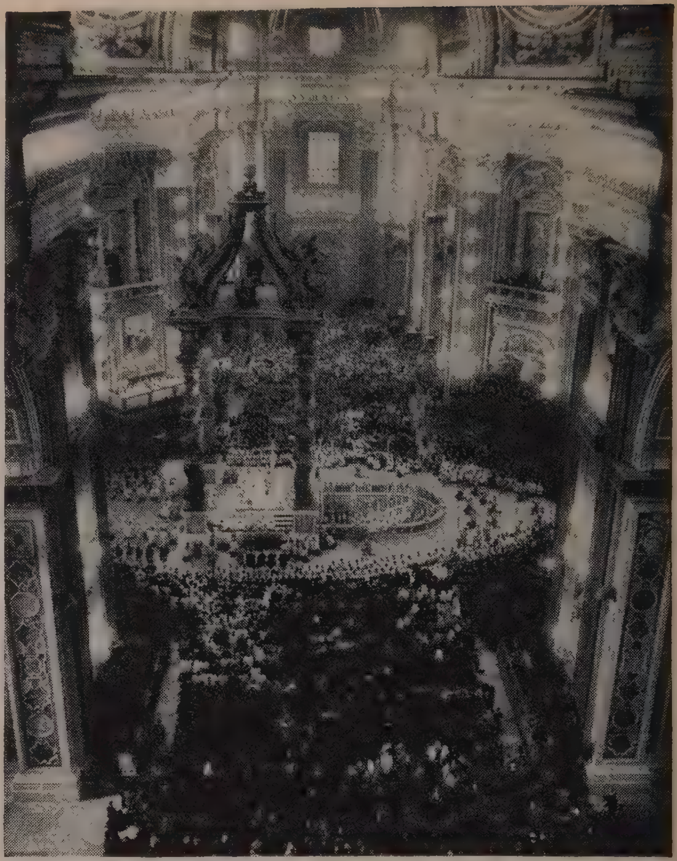
The Vatican in 1949 had 31 nuncios, representatives of ambassadorial rank and 6 internuncios, representatives of lesser rank. The Vatican sent apostolic delegates, representatives without accredited rank, to 23 countries; 43 diplomatic representatives were accredited to the Vatican including 16 ambassadors and 24 ministers.

Premier Alcide de Gasperi of Italy paid a state visit to Pope Pius XII Feb. 11 in commemoration of the 20th anniversary of the Lateran pact.

In March Archbishop Fernando Cento, apostolic nuncio to Belgium, served as representative of the Holy See at the International Council of the European Movement. Archbishop Cento said the Church rejoiced because European unity was becoming a reality since the civilization of Europe was based on Christianity.

On July 6 the first minister of India to the Holy See presented his credentials. In his address to the new envoy the pope stressed the important role which the far east, and India in particular, is called upon to play in stemming the tide of materialism and referred to India's position of responsibility.

The Holy See was represented at the negotiations at Geneva, Switzerland, for new international treaties in favour of prisoners, wounded and civilians in time of war. Apostolic nuncio to Switzerland, Archbishop Philip Bernardini, headed the Holy See delegation. Although proposals to mention man's divine origin as the source of human rights were not accepted, of the 20 other amendments put forward by the Holy See all were accepted in substance. These dealt with religious assistance to prisoner-of-war and internment camps, regulations for divine worship, supply of reading matter, visits by representatives of religious authorities and, above all, freedom of and a greater recognition for the nongovernmental welfare agencies. Although the Vatican state was a member of some international organizations and the Holy See had been represented in an unofficial or observer's capacity at various international conferences since 1870, its participation in the conference of Geneva probably constituted the first time since 1870 that it had been invited and admitted to a diplomatic conference on a level with states, where its representatives exercised the rank and functions of minister plenipotentiary.



CANONIZATION CEREMONIES during which Jeanne de Lestonnac of France was raised to sainthood on May 15, 1949, by Pope Pius XII at St. Peter's basilica in Vatican City.

Oct. 25 the Vatican announced Msgr. Aloysius Joseph Muench, bishop of Fargo, N.D., had been appointed regent of the apostolic nunciature in Germany, with his seat at Eichstätt. Konrad Adenauer, west German federal chancellor said the Holy See was the first foreign power to nominate a diplomatic representative at Bonn.

The Vatican's position on the question of the Holy Land was made clear in an encyclical demanding internationalization of Jerusalem and freedom for religious institutions.

Because of continued attacks by the Communists against the representatives of the Vatican the Supreme Congregation of the Holy Office decreed that all supporters of Communist doctrines were to be excommunicated. (*See* also Pius XII; Roman Catholic Church.) (J. LaF.)

Veal: *see* Meat.

Vegetable Oils and Animal Fats.

Domestic production of fats and oils in the U.S., including the oil equivalent of exported seeds, in 1949 was forecast at a new high of about 12,010,000,000 lb., compared with 11,786,000,000 lb. in 1948 and a prewar level of 8,696,000,000 lb. Several of the oilseed crops were large, particularly cottonseed and soybeans. But even the animal fats were abundant, lard and butter in surplus being included in government purchases. Domestic consumption, on the other hand, was smaller in 1949 than in 1948, and the excess of production over consumption widened to a new record of 1,400,000,000 lb.

*U.S. Production of Principal Fats and Oils**

(In millions of pounds)

	1949†	1948	1943	Average, 1937–41
Butter	1,800	1,663	1,843	2,220
Lard	2,850	2,526	3,267	2,091
Edible tallow	180	182	213	225
Edible vegetable oils	4,000	4,355	2,761	2,253
Soap fats and oils	2,320	2,203	2,101	1,523
Drying oils	840	839	804	363
Other oils	20	18	32	21
Totals	12,010	11,786	11,021	8,696

*Year beginning October.
†Partly forecast.

Total U.S. butter production in 1949 was estimated at 1,800,000,000 lb., about 8% more than in 1948. Production of lard and pork fats increased more than 300,000,000 lb. in 1949, primarily because the record corn crop of 1948 stimulated retention of a larger number of brood sows. Fats from other animals remained approximately on the previous level of production. Vegetable oilseeds, however, were slightly less abundant; the 1949 cottonseed crop was about 9% more than that of the previous year; soybeans were a near record crop; flaxseed production declined, compared with 1948, but was 45% more than average. The peanut crop was an average one, with acreage allocations and marketing quotas in force.

As in 1948, prices of most fats and oils declined sharply in February, recovered moderately and then declined again as the abundant harvests became more certain. Prices ranged from two-thirds down to less than one-half of their postwar peak levels reached early in 1948. Butter was about 60 cents wholesale, lard between 10 and 12 cents and soybeans were about half the extreme levels of the past few years.

Exports of most sorts of fats and oils from the U.S., largely to western Europe, increased in 1949. For the first nine months of the year the outgo was threefold that of 1948—1,826,200,000 lb. against 658,300,000 lb. in the previous period. Lard made up nearly one-third of the total. Imports declined, but less sharply than exports increased, amounting to 756,400,000 lb. in the first nine months of 1949, compared with 938,900,000 lb. in the comparable period of 1948.

In 1949 the house of representatives passed the oleomargarine bill, and it was to be debated by the senate early in 1950. As passed by the house, the bill provided for repeal of the 10 cents a pound tax on yellow margarine; repeal of the one-fourth cent per pound tax on white margarine; repeal of all licence fees on margarine manufacturers, wholesalers and retailers; and provided that public eating places must serve it in triangular shape to differentiate it from butter. Consumption of margarine in the U.S. declined about 8% in 1949 to 5.6 lb. per capita, which was nevertheless nearly double the prewar rate.

Synthetic detergents continued to make further inroads during 1949 into the amount of fats and oils needed for soaps. Soybean oil futures trading was commenced.

Although fats and oils on a world-wide basis in 1949 approximated 100% of prewar production, they were still the major food in short supply in some parts of the world, particularly in the occupied areas of central Europe and Japan. The more abundant crops of the U.S., plus some increase elsewhere, provided an increase of about 10% in export volume over 1948, although world trade was still 20% less than prewar. The peanut production scheme for some African areas had thus far proved disappointing. The olive oil crop of the Mediterranean countries of Europe in 1949 was an abundant one. All in all, the fats and oils shortage appeared to be much relaxed, with effective demand measured by available hard currency the major block rather than tight supplies. (*See* also COTTON; PEANUTS; SOYBEANS.) (J. K. R.)

Vegetables.

The U.S. 1949 crop of 25 vegetables, classed as commercial truck crops for the fresh market (strictly market garden areas and farm gardens not included), was a large and valuable one in comparison with the average for the previous decade, although slightly below 1948 in tonnage, acreage and value. Consumption per capita of fresh vegetables in 1949 was estimated at 243 lb., only 95% as much as in 1948 but 103% of the prewar average. Prices averaged slightly higher than in 1948. The Cuban crop of 1949–50 appeared to be 10% larger than in recent years.

The 1949 U.S. production of 11 truck crops for commercial processing was 5,522,610 tons with new high record crops of sweet corn, pickling cucumbers and green lima beans. Acreage increased to 1,727,640, as compared with 1,697,870 ac. in 1948, and an average of 1,742,880 ac. in the decade 1938–47. Freezing made further gains as a processing method.

Commercial Truck Crops for the Fresh Market.—The total tonnage of 25 crops was 8,186,200 tons in 1949, valued at $589,757,000, compared with 8,459,700 tons in 1948 and 7,383,800 tons average for the previous decade. Production declined for 15 of the crops, increased for 10. Cabbage was the leading crop in tonnage, with 1,218,000 tons; lettuce was in second place with 1,171,100 tons; and watermelons were third with 960,000 tons. California was the leading state with 2,372,700 tons; Florida second with 908,200 tons; and New York third with 726,800 tons.

Table I.—*U.S. Vegetable Production for Fresh Market*

(In thousands)

Crop	Unit	1949	1948	Average 1938–47
Artichokes	boxes	654	803	814
Asparagus	crates	3,651	3,975	4,560
Beans, lima	bu.	1,191	1,356	1,411
Beans, snap	bu.	16,854	17,079	16,949
Beets	bu.	1,781	1,982	2,172
Cabbage	tons	1,218,300	1,326,800	1,195,300
Cantaloupes	crates	12,412	12,390	10,288
Carrots	bu.	24,411	28,064	22,524
Cauliflower	crates	13,535	13,336	9,793
Celery	crates	23,707	22,862	18,456
Corn, sweet	ears	341,450	329,520	285,142
Cucumbers	bu.	6,716	6,749	5,145
Eggplant	bu.	1,467	1,629	1,176
Escarole	bu.	1,275	1,426	925
Honeyball melons	crates	137	66	234
Honeydew melons	crates	2,537	3,129	3,174
Kale	bu.	920	525	659
Lettuce	crates	33,461	34,391	26,160
Onions	sacks	36,135	41,411	36,684
Peas, green	bu.	3,099	3,647	6,796
Peppers, green	bu.	8,379	7,643	5,658
Shallots	bu.	386	509	545
Spinach	bu.	11,581	12,519	14,120
Tomatoes	bu.	31,820	29,791	28,106
Watermelons	melons	76,801	73,878	68,619

Acreage for harvest in 1949 was 1,786,440, compared with 1,802,342 ac. in 1948; as compared with the previous decade, acreage was larger for the fall and winter harvest seasons. California, as usual, was the leading producer with 355,260 ac. devoted to such truck crops, followed by Texas with 304,600 ac. and Florida with 222,250 ac.

The total value of these crops was 1% less than in 1948, but 41% more than average for the decade; fall and winter crops were more valuable than in 1948, whereas spring crops were 13% less valuable and summer crops 2% below 1948. Lettuce, valued at more than one-fifth of the total for the 25 crops, was the leading crop in value, followed by tomatoes with about one-sixth.

Commercial Truck Crops for Processing.—The aggregate production in 1949 of 11 truck crops for commercial processing, including crops for canning, freezing, pickling and other processing, exclusive of dehydration, was 5,522,610 tons, compared with 5,471,500 tons in 1948, and 4,993,080 tons average for 1938–47. California produced 1,202,940 tons of the total and Wisconsin 635,790 tons. Tomatoes (2,633,700 tons) accounted for nearly one-half of the total, sweet corn, a record crop, for about one-fourth. Yields per acre were above average for all processing vegetables, except green peas and pimientos. Harvested acreage of 1,727,640 ac. was about 2% above 1948, but about 1% below average.

Processing vegetable prices per ton were moderately lower than in 1948, except asparagus. The total value of the crop was $206,144,000, compared with $214,559,000 in 1948 and $148,412,000 average for the decade 1938–47. Tomatoes were the largest contributor—$61,928,000. Smaller amounts of the 1949 crops of sweet corn, tomatoes, and cabbage were processed than in 1948, but several other vegetables were processed in larger amounts; the 1949 total pack of canned vegetables was about one-tenth less than that of 1948. Only freezing gained slightly over the previous year as a method of processing.

Table II.—*U.S. Production of 11 Vegetables for Processing*

(In tons)

Crop	1949	1948	Average 1938–47
Asparagus	112,750	91,240	86,650
Beans, lima	84,800	68,900	35,260
Beans, snap	233,010	187,030	180,070
Beets	144,100	94,200	116,280
Cabbage	169,400	203,700	170,000
Corn, sweet	1,398,300	1,262,100	1,037,270
Cucumbers	280,560	236,330	180,790
Peas, green	357,280	348,800	382,920
Pimientos	23,770	17,880	17,340
Spinach	84,940	47,820	72,100
Tomatoes	2,633,700	2,913,500	2,714,400

The U.S. dry edible bean crop of 1949 was a record one of 20,059,000 100-lb. bags (cleaned basis), compared with 19,420,000 bags in 1948 and an average for the decade of 15,640,000 bags. Michigan, with 5,736,000 bags (4,258,000 bags in 1948), produced 29% of the crop and California was second with 4,696,000 bags. The large crop, plus heavy carryover of about 5,000,000 bags, with government price support at 80% of parity on the 1949 crop appeared to indicate that a cut would be ordered in acreage for 1950 and the support level lowered. World edible dry bean production for the 1949–50 season was estimated at 115,000,000 bags, slightly below the previous year, and 8% more than average in the prewar period. The major postwar decrease was in Asia, the major increases in North and South America. Canada in 1949 produced the largest bean crop since 1941.

The dry pea crop of 1949 in the U.S. of 3,267,000 bags (uncleaned) was low compared with 1948 and very low compared with the 5,620,000 bag average of the previous decade. World production declined about 6% from the high level of the previous year, but was 16% above the prewar average.

Although exports of vegetables, either in fresh or processed form, were a comparatively small part of the crop, the rescinding by Canada on Oct. 1 of import restrictions on fresh vegetables opened the door for increased exports of tomatoes, lettuce, carrots, cabbage, celery and spinach. (*See* also Agriculture; Corn; Horticulture; Potatoes.) (J. K. R.)

Venereal Diseases.

Venereal disease continued to be a health problem of major dimensions in 1949. The World Health organization reported that estimates of the number of existing cases of syphilis alone ranged from 20,000,000 to 100,000,000; deaths from late syphilis were estimated to number at least 2,000,000 annually and rates for mortality from syphilis ranged from .8 to 210 per 100,000 population. Mortality rates were believed to be even higher in some unreported areas of the world.

Acknowledging the need for a public health approach to the problem of venereal disease, W.H.O. offered assistance to countries requesting its aid in instituting or improving venereal disease control structures. Its efforts were strengthened by material assistance provided by the United Nations International Children's Emergency fund to campaigns against syphilis in children and pregnant women.

United States.—In the United States, the outlook regarding venereal disease control was generally encouraging in 1949. The total number of syphilis cases (all stages) reported for the year ending June 30, 1949, for civilians in the United States and its territories, was approximately 14% lower than for the preceding fiscal year—296,455, as compared with 345,992.

Moreover, declining morbidity reports for the early stages of syphilis were believed to indicate that the incidence of the disease might be decreasing. Consistent quarterly declines for almost three years in the discovery rate of primary and secondary syphilis, and later declines in the discovery rate of early latent syphilis, suggested such a reduction in the number of new infections occurring. That these declines occurred in the face of a 30% increase in efforts to find cases of venereal disease strengthened the thesis of diminished incidence.

Reported cases of gonorrhoea were lower in 1949 than for any year since 1945. For the United States and its territories, the 1949 total among civilians was 342,856.

The latest data recorded on mortality from syphilis likewise showed declines from figures previously reported. General syphilis mortality dropped to an estimated rate of 8.2 per 100,000 population in 1948, while for the same year the rate of infant deaths caused by syphilis was estimated at .13 per 1,000 live births. The admission rate to mental hospitals for psychoses due to syphilis (excluding Veterans' administration facilities) was 4.2 per 100,000 population in 1947 as compared to 6.3 in 1938.

Activities of Health Departments—The emphasis placed on case-finding by health departments in the United States was reflected in the number of diagnostic observations completed in public clinics during the year. The total number was 2,276,000 observations. As a result of these examinations, almost 500,000 persons were diagnosed in clinics as having a venereal disease.

Interviewing of patients and investigation of their contacts continued as major case-finding activities carried on by public clinics. Of a total of 534,000 case-finding investigations completed by staffs of these clinics, approximately 70% were made on contacts of persons known to have a venereal disease. The remaining 30% of investigations were made on persons brought to the attention of the clinics because of positive tests in premarital or prenatal examinations or in mass blood testing surveys or through other means.

More than half of all syphilis cases diagnosed in public clinics were referred to inpatient facilities for treatment. Almost all the gonorrhoea cases diagnosed in the clinics were treated in the clinics.

Admissions to rapid treatment centres, declining 11% from the figure reported for the preceding year, numbered 160,066 in the fiscal year 1949. Syphilis patients comprised 79% of this total, while gonorrhoea patients and patients with other venereal diseases comprised 3% and 2% respectively. The remaining admissions were observation cases, persons found after examination not to have a venereal disease and patients admitted for treatment because of exposure to early infectious syphilis.

Special projects to demonstrate case-finding methods were conducted by health departments, with federal aid, in more than 1,500 communities in 36 states and territories. These projects consisted of mass blood testing, contact investigation or public information programs or combinations of these case-finding techniques.

Treatment—Procaine penicillin was widely used in the United States in the treatment of syphilis, largely replacing penicillin in oil and beeswax. Clinical investigation of procaine penicillin, with aluminum monostearate added to delay absorption, was

Trend of Syphilis Morbidity Reporting, U.S. Civilians and Armed Forces
Fiscal Years 1941-1949

		Reported Cases						Rates per 1,000 Population			
Fiscal Year	Est. Pop. in thousands	Total Including Not Stated	Primary or secondary	All early syphilis (primary, secondary, early latent)	Congenital	Late and late latent	Total including not stated	Primary or secondary	All early syphilis (primary, secondary, early latent)	Congenital	Late and late latent
					Continental U.S. Civilians						
1941	131,897	477,841	67,958	176,616	17,592	201,190	3.623	.515	1.339	.133	1.525
1942	131,943	472,245	75,704	192,137	16,924	202,216	3.579	.574	1.456	.128	1.533
1943	128,728	564,918	82,230	231,139	16,173	252,995	4.388	.639	1.796	.126	1.965
1944	127,028	458,199	78,418	200,808	13,576	203,396	3.607	.617	1.581	.107	1.601
1945	127,037	356,315	77,007	178,142	12,339	142,731	2.805	.606	1.402	.097	1.124
1946	133,543	360,918	94,957	202,293	12,106	125,836	2.703	.711	1.515	.091	0.942
1947	140,974	373,296	106,594	214,349	12,284	122,257	2.648	.756	1.520	.087	0.867
1948	144,184	338,141	80,528	178,273	13,309	123,972	2.345	.559	1.236	.092	0.860
1949	146,578	288,769	54,268	138,610	14,295	121,933	1.970	.370	0.946	.098	0.832
					Total Civilian and Armed Forces						
1941	132,638	483,897	74,014	182,672	17,592	201,190	3.648	.558	1.377	.133	1.517
1942	133,953	486,104	89,563	205,996	16,924	202,216	3.629	.669	1.538	.126	1.510
1943	135,646	592,941	110,253	259,162	16,173	252,995	4.371	.813	1.911	.119	1.865
1944	137,368	504,155	124,374	246,764	13,576	203,396	3.670	.905	1.796	.099	1.481
1945	138,923	409,116	129,808	230,943	12,339	142,731	2.945	.934	1.662	.089	1.027
1946	140,387	420,360	154,399	261,735	12,106	125,836	2.994	1.100	1.864	.086	0.896
1947	142,673	399,589	132,887	240,642	12,284	122,257	2.801	.931	1.687	.086	0.857
1948	145,434	353,393	95,780	193,525	13,309	123,972	2.430	.659	1.331	.092	0.852
1949	148,051	301,104	66,603	150,945	14,295	121,933	2.034	.450	1.020	.097	0.824

continued. The U.S. public health service reported that results of treatment with this preparation appeared to compare favourably with those obtained with penicillin in aqueous solution, which required more frequent administration. These results were considered preliminary, however, requiring a longer period of posttreatment observation before definite conclusions were justified.

Evaluation of schedules of treatment employing penicillin in aqueous solution and in oil and beeswax continued to show that where frequency of administration and quantity of penicillin were properly balanced, excellent results might be expected. Studies, after 12 to 15 posttreatment months, of several of the more effective schedules using these older forms of penicillin therapy showed that retreatment was necessary in less than 12% of the observed cases. (*See* also *Europe and British Commonwealth*, below.)

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(T. J. B.)

Europe and British Commonwealth.—Incidence showed a steady decline after the peak year of 1946 when in Great Britain alone 17,675 cases of early syphilis and 47,343 cases of gonorrhoea were treated at the various government and municipal clinics. In 1948 early cases of syphilis numbered 10,637 and gonorrhoea 30,312. Reports for 1949 showed that this decline was maintained.

Among the native populations of South Africa, Kenya and Southern Rhodesia the incidence remained high. In Southern Rhodesia alone nearly 600,000 received treatment and subsequent reports indicate that the numbers did not decrease: the diseases were widespread in both urban and rural areas. Efforts were made to bring penicillin into general use in the treatment of all cases of early syphilis; but the supply position prevented the institution of this as the standard procedure. It should also be noted that the incidence among service personnel in the Mediterranean, East Indies, Singapore and the far east remained high.

In France and Germany the incidence lessened but only slightly. This was probably owing to the fact that many continental venereologists did not use penicillin in the treatment of syphilis and gonorrhoea to the same general extent as was customary in the United States and Great Britain. In this connection it was interesting to note that no worker in this field in either of the two latter countries reported a definite case in which the infecting organisms of these two diseases were penicillin-resistant.

In Sweden with a population of just less than 7,000,000 there were 1,026 cases of early syphilis and 10,597 of gonorrhoea in 1948, a fall of 181 and 1,053 respectively compared with the figures for the previous year. There was every reason to believe that this trend was continued during 1949, an observation that applied to all other European countries for which statistics were available.

The incidence of nongonococcal urethritis in the male, a disease that is commonly venereal in origin, showed a definite increase. However, this could partly be attributed to the fact that in the past many workers considered all cases of urethritis to be gonococcal in origin and therefore noted them in their official returns as gonorrhoea although the gonococcus was never found in the secretions. It was owing to the increasing use of penicillin, which was found to cure all cases of gonorrhoea but to be usually ineffective against nongonococcal urethritis, that differential diagnosis in such cases became more accurate. Reports showed that nongonococcal urethritis in its abacterial form was at this time the most common venereal disease, but one upon which very little research had been carried out. The Expert Committee on Venereal Diseases of the World Health organization sitting at Geneva, Switz., recommended the collection of data on this condition and three memoranda were issued.

Advances in the treatment of the venereal diseases generally were associated chiefly with aureomycin. It was shown to have a low toxicity when administered orally in moderate dosage and to be curative in gonorrhoea (H. S. Collins *et al.*, 1948, C. H. Chen *et al.*, 1949); lymphogranuloma inguinale (L. T. Wright *et al.*, 1948, H. S. Collins *et al.*, 1948); granuloma venereum (L. T. Wright *et al.*, 1948, R. B. Greenblatt *et al.*, 1949); chancroid (C. H. Chen *et al.*, 1949); certain types of nongonococcal urethritis due to the virus of inclusion conjunctivitis (A. H. Harkness, 1949) and possibly pleuropneumonialike organisms (H. S. Collins *et al.*, 1948, R. R. Willcox and G. W. M. Findlay, 1949, A. H. Harkness, 1949). Confirmation was also obtained for the effectiveness of aureomycin in the treatment of syphilis both in its early and later manifestations. (P. A. O'Leary *et al.*, 1948 and 1949) but extensive trials in this field still remained to be carried out. There appeared to be great possibilities in the extensive use of aureomycin in prophylaxis since it had been shown to be effective against six venereal diseases.

Another antibiotic, chloromycetin, was proved by R. B. Greenblatt and his collaborators to be effective against granuloma venereum and there were indications that it might also prove useful in cases of certain types of nongonococcal urethritis.

(A. H. Hs.)

Venezuela. A republic on the north coast of South America, Venezuela is bounded on the north by the Caribbean sea, on the east by British Guiana, on the south by Brazil and on the west by Colombia. Area: 352,143 sq.mi. Pop. (est. July 1949) about 4,500,000. Approximately 10% of the entire population lives in the capital, Caracas, and its suburbs; while Maracaibo (150,000), Valencia (65,000), Barquisimeto (60,000), Puerto La Cruz (45,000), San Cristóbal (40,000), Maracay (35,000), Ciudad Bolívar (30,000) and Coro (25,000) are the other large cities. Executive power was exercised throughout 1949 by the military junta, composed of Lt. Col. Carlos Delgado Chalbaud, Lt. Col. Marcos Pérez Jiménez and Lt. Col.

Luis Llovera Páez.

History.—The political tension of late 1948 gradually relaxed during 1949, as it became apparent that an orderly liquidation of the crisis was destined to occur. Decrees provided for the invalidation of the confiscation of private property in the years 1945–48 and the eventual restoration of the property. Diplomatic relations with the United States, Great Britain, Spain and other countries were resumed early in 1949. A commission was set up late in 1949 to frame an electoral law by virtue of which a national congress would be chosen with power to revise the constitution. On Nov. 24, an amnesty of political prisoners, and municipal elections, to be held at an early date, were decreed.

The year 1949 was marked by a determined effort to restore order to public finance; and a general overhauling of fiscal administration was undertaken. Venezuela continued in 1949 to be the foremost exporter and second producer of petroleum products. Early in 1949, temporary market conditions led to a slight falling off in production, but in the second half year it rose again and reached a peak of 1,400,000 bbl. per day in the last months of the year.

The year 1949 witnessed substantial progress in the initial stages of the iron mining enterprises of the Bethlehem Steel company and the United States Steel corporation south of the Orinoco river. These operations foreshadowed an economic development of the east and south which would hasten the realization of great hydroelectric projects and the utilization of natural gas for industrial purposes.

Venezuelan price levels rose only slightly during 1949. The currency was one of the few in the world whose statutory basis had not been changed in the 20th century. The housing shortage in Caracas was slightly less pressing; in some provincial cities it became more acute. There was no significant unemployment reported during the year.

Government activity in forestry, in irrigation, agricultural education, experiment stations and pest control was noteworthy in 1949. The problem of adequate supplies of meat and dairy products was attacked by the ministry of agriculture and Corporacion de Fomento, a government long-term financing authority. The activities of the ministry of development embraced a wide variety of mining and petroleum interests, as well as industrial promotion in many lines. Some hundred miles of new roads were constructed and old roads were repaired; the program of school and hospital construction was advanced. In the city of Caracas the construction of a central arterial boulevard, the Avenida Bolivar, was brought close to completion by December. Plans were completed for new highways between the capital and the improved seaport of La Guaira. (C. Me.)

Education.—At the beginning of the school year 1947–48 there were 4,951 primary schools, with an enrolment of 329,821 pupils. In March 1949, secondary and special schools, public and private, numbered 132, with an enrolment of 20,047; the 12 institutions giving preuniversity training had 1,158 students. There were 3 universities. About 7.5% of the 1947–48 budget was earmarked for education.

Finance.—The monetary unit is the bolívar, valued at $0.2985 U.S. currency, controlled and free selling rates, on Dec. 1, 1949. The budget for the fiscal year 1950 (July 1, 1949–June 30, 1950) estimated expenditure at 1,610,400,000 bolívares (actual expenditure 1948–49: 1,917,520,045 bolívares; actual revenue: 1,962,709,534 bolívares). There was no external debt. The domestic debt on Dec. 31, 1948, was 22,800,000 bolívares. Currency in circulation on Oct. 31, 1949: 710,000,000 bolívares; sight deposits: 661,000,000 bolívares; time deposits: 130,000,000 bolívares; government deposits: 368,000,000 bolívares; gold reserve of the Central bank and treasury: $373,000,000.

Trade and Communications.—Exports in 1948 totalled 3,340,000,000 bolívares; imports were 2,296,000,000 bolívares. Chief exports were crude petroleum and petroleum products (97%), coffee (1%) and cacao (1%). Chief imports were machinery and equipment (32%), metals and manufactures (18%), foodstuffs and beverages (16%) and textiles (10%). Chief suppliers were the U.S. (73%) and the United Kingdom (8%). Major customers were the Netherlands Antilles (petroleum for refining) and the U.S.

Railway transportation is not highly developed and equipment is obsolete and in need of repair; trackage totalled 700 mi. in 1949. The highway system (1948) included 3,750 mi. of all-weather roads and 1,600 mi. of unimproved, dry-weather roads. Motor vehicles on June 30, 1949, included 23,436 automobiles, 6,347 trucks and 830 buses. According to Lloyd's Register of Shipping, the merchant marine (June 30, 1948) had 64 steamers and motor ships (100 tons and over) aggregating 95,591 gross tons and 6 sailing ships and barges aggregating 1,044 tons. Telephones numbered 48,800 in 1948.

Agriculture.—Agriculture does not supply the basic foodstuff needs of the population. Output of coffee, the chief export crop, totalled 778,794 bags of 132 lb. each in 1947–48; exports in 1948 were about 600,000 bags. Exports of cacao (1948) were 19,960 short tons. Sugar production (1948) was 29,275 short tons; maize 532,000 tons and rice 25,000 tons. Production of fish was reported to be 57,630 short tons in 1948; lumber production was 151,308 cu.m. (1 cu.m. = 424 bd.ft.).

Manufactures.—Production figures in 1948 included: cement 235,457 short tons; tires 38,736 units; tubes 33,012 units; soap 21,165 short tons; cigarettes 1,848,000,000 units; electric energy 643,140,000 kw.hr.; natural gas 13,320,000,000 cu.m. Textile mills supply about one-third of domestic needs. The cost of living index (food, coal and soap) stood at 202 in July, 1949 (1937 = 100).

Mineral Production.—Petroleum is the dominant factor in the Venezuelan economy. Production in 1948 reached the record figure of 490,015,000 bbl. Crude petroleum exports totalled 437,699,658 bbl.; exports of refined products were 31,390,974 bbl. Investments by the 13 oil companies operating 54 productive fields were estimated in June, 1949, at over 3,090,000,000 bolívares. Refinery output by ten refineries and topping plants in operation in 1948 totalled 43,512,541 bbl. Several new refineries, topping plants and pipe lines were under construction in 1949. Production of other minerals in 1948 included 49,730 oz. of gold and diamonds totalling 75,513 carats. A subsidiary of Bethlehem Steel Corp. completed plans for the large-scale mining of iron ore in 1949.

Vermont.

A north Atlantic state of the United States of America, the only one of the New England states without a sea coast, Vermont is popularly known as the "Green Mountain state"; it was admitted to the union in 1791. Area: 9,609 sq.mi., of which 331 sq.mi are water. Population (1940), 359,231 (including 235,992 rural, 123,239 urban); 328,740 native white including 71,180 of foreign and mixed parentage; 384 Negro, 41 of other races. The U.S. bureau of the census on July 1, 1949, estimated the population of the state to be 369,000. Montpelier is the capital city, with a population (1940) of 8,006. The chief cities are Burlington (27,686) and Rutland (17,082).

History.—The general assembly met from Jan. 5 to May 13, 1949, the longest legislative session in the history of the state. Legislation enacted or amended included: the designation of the sugar maple as the state tree, provision for the construction of new state buildings and a public health laboratory, the reorganization of the department of health, approval of the New England Interstate Water Pollution Control compact and the Northeastern Fire Protection compact, licensing and regulation of hospitals, regulation of school buses, radical changes in distribution of state-aid for education and control of brucellosis in cattle.

The chief officers of the state during 1949 were: Ernest W. Gibson, governor; Harold J. Arthur, lieutenant governor; Levi R. Kelley, state treasurer (to September); Howard E. Armstrong, secretary of state; David V. Anderson, auditor of accounts; Clifton G. Parker, attorney general.

Governor Gibson's appointment to the office of federal district judge of Vermont, by Pres. Harry S. Truman was announced Oct. 17, to take effect in Jan. 1950. Governor Gibson appointed George H. Amidon to the office of treasurer, Sept. 6, to succeed Levi R. Kelley who resigned to become treasurer and business manager of the University of Vermont and State Agricultural college, Burlington.

The new state office building dedicated on Nov. 8, 1948, by Governor Gibson was opened on Sept. 16, 1949.

Education.—There were approximately 855 elementary schools in Vermont in 1948–49 with a teaching staff of 1,769 and enrolment of approximately 43,000. There were 84 public high schools with a teaching staff of 719 teachers and enrolment of 15,109. A total of $4,066,335.85 was spent on education by the state of Vermont during the fiscal year ending June 30, 1949. State superintendent of schools was the commissioner of education, A. John Holden who succeeded Ralph E. Noble on Aug. 1, 1949.

Social Insurance and Assistance, Public Welfare and Related Programs.—Relief in general was administered by the overseer of the poor in each town. Approximately 6,747 persons a month received old-age assistance from state funds to the amount of $2,765,111.69 for the year 1949. Dependent children receiving aid from state funds averaged 2,578 representing payment of $570,648.95 to 947 mothers' aid recipients a

Table I.—*Leading Agricultural Products of Vermont*

Crop	1949	1948	Average 1938-47
All corn, bu.	2,565,000	2,288,000	2,488,000
Oats, bu.	1,178,000	1,480,000	1,507,000
Hay, all, tons	1,369,000	1,597,000	1,349,000
Potatoes, late, bu.	1,128,000	1,295,000	1,519,000
Apples, commercial, bu.	1,089,000	774,000	1,089,000
Maple syrup, gal.	554,000	619,000	912,000

Table II.—*Principal Manufacturing and Processing Industries of Vermont*

Industry	Value of products 1948 (est.)	1947
Machines, machine tools and allied industries	$66,426,835	$65,300,110
Dairy products	55,164,300	54,603,260
Woollen, cotton and knit goods	48,801,020	48,221,991
Woodworking, furniture and lumber	30 399,083	39,553,304
Granite, marble and other stone industries	20,174,410	19,097,715
Paper and paper products	19,201,565	18,814,050

month. Blind assistance funds amounting to $85,878.55 for the year were distributed to about 184 persons a month; aid to adult crippled persons amounted to $28,431.04 for the year, distributed to approximately 185 persons a month. Unemployment compensation payments made under the state law numbered 211,900 and amounted to $3,923,951.08 in 1949; 73,301 readjustment allowance payments under the G.I. Bill of Rights amounting to $1,443,523 were paid for unemployment and 954 payments totalling $84,913 were made to self-employed veterans. The three state correctional institutions, during the fiscal year ending June 30, 1949, had an average of 318 inmates; their total expenses were $498,542.76.

Communications.—The total mileage of the public highway system (state, state-aid and town highways) as of June 30, 1949, was 13,968.74, of which 1,805.15 mi. were in the state system and 2,775.11 mi. in the state-aid system. Total expenditures during the fiscal year ending June 30, 1949, amounted to $11,476,210.53 of which $7,367,538.39 was for state highways and $2,749,718.81 for state-aid highways. There were 959.04 mi. of railways in the state in the year ending Dec. 31, 1949; airports in the state numbered 23, airways 2, with a total mileage of 207. Telephone subscribers, as of Dec. 31, 1949, were estimated at 80,943.

Banking and Finance.—The number of state and national banks as of June 30, 1949, was 79, of which 40 were state banks with total deposits of $204,391,610.45 and assets of $228,932,849.77. There were eight co-operative building, savings and loan associations with total assets of $3,719,832.43.

Total receipts of the state as of June 30, 1949, were $32,540,024.69; disbursements $36,509,578.86; unappropriated surplus $230,241.14; obligations outstanding $2,220,000.

Agriculture.—The total acreage of harvested crops in the state in 1949 according to the U.S. bureau of agricultural economics was 1,153,000, compared with 1,149,000 in 1948.

Manufacturing.—No statistics on manufactures for 1949 were available from the department of industrial relations or the director of research and planning, partly because of uncertain economic conditions. According to the Vermont unemployment compensation commission there were 59,077 individuals employed by employers (all industries) covered under the Vermont Unemployment Compensation law. During 1949, it was estimated that all persons covered by this law earned approximately $140,000,000.

Mineral Production.—Leading mineral products of the state in 1949, according to the director of research and planning, were granite, marble, lime, talc and slate. Asbestos production, though small, was the largest in the United States so far as known. (C. E. Fe.)

Veterans' Administration (U.S.).

By Nov. 1, 1949, living U.S. veterans of all wars numbered 19,008,000, of whom 15,268,000 had served in World War II. Veterans with their families made up about one-third of the nation's total population.

Following are the major services administered by VA for veterans, their dependents and beneficiaries:

Education and Training.—Public law 266, passed Aug. 24, 1949, prohibited veterans from taking G.I. bill courses for avocational and recreational purposes, but exempted flight training from the procedures. To learn to fly under the G.I. bill, a veteran had to submit a certificate showing physical qualification for flight training, along with his own affidavit, supported by the corroborating affidavits of two competent disinterested persons, that flight training would be useful to him in connection with earning a livelihood.

By Nov. 1, 1949, more than 6,400,000 veterans had, at one time or another, taken education and training under the G.I. bill.

Enrolments in colleges and universities continued to drop from the peak of 1,158,000 recorded in the fall of 1947; on Nov. 1, 1949, the figure was 738,000. Enrolments in schools below the college level, however, increased. On Nov. 1, 1947, nearly 591,000 veterans were enrolled in such schools; on Nov. 1, 1949, the total had reached a new high of 808,000.

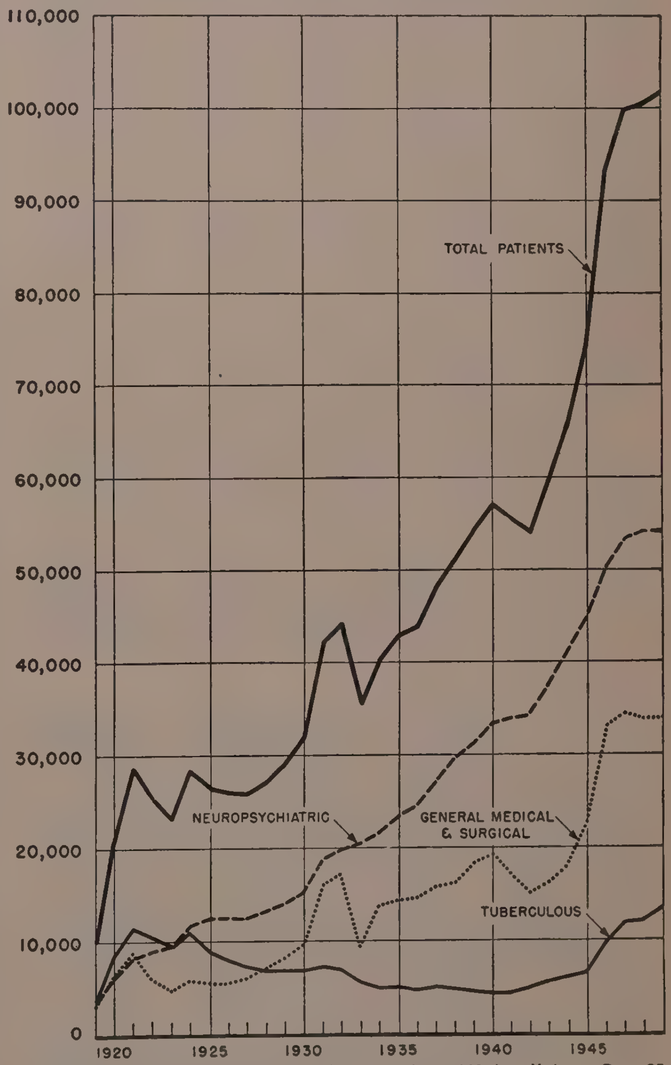
The number of on-the-job trainees continued to drop steadily, reaching a new low of 285,000 on Nov. 1, 1949. Institutional on-farm training enrolments increased, to 304,000 on Nov. 1, 1949.

Training for the Disabled.—On Nov. 1, 1949, about 528,000 eligible World War II veterans with service-connected disabilities, in need of vocational training to overcome their handicaps, were enrolled in schools, on-farm training courses or on-the-job training programs. Enrolments in all types of training except on-farm courses had been decreasing steadily. Peak college enrolments were reached in the fall of 1947, with 87,000 disabled veteran-students; on Nov. 1, 1949, the total was 52,000. Enrolments in schools below college level dropped from a peak of 40,000 on March 1, 1947, to 31,000 on Nov. 1, 1949.

Farm training enrolments, on the other hand, had risen, reaching a peak of 43,000 on Nov. 1, 1949. Job training had been declining since the peak of 108,000 was reached on Sept. 1, 1947. On Nov. 1, 1949, the total was 58,000.

Loans.—By Nov. 1, 1949, a total of 1,781,000 G.I. loans of all types, amounting to more than $9,600,000,000, had been approved by VA. About 90%, or 1,625,000, were for homes; 53,000 for farms and 113,000 for businesses.

During the latter part of 1949, veterans experienced less



NUMBER OF VETERANS remaining in VA and non-VA hospitals on Dec. 31 from 1919 to 1949 by types of disability, as compiled by the Veterans' administration difficulty in obtaining G.I. home loans than at any time in the previous two years. VA received nearly 40,000 applications for G.I. home loan guarantees during Oct. 1949 alone—the highest number received in any month since Nov. 1947.

Veterans had made excellent records in meeting their G.I. loan obligations. By Oct. 25, 1949, a total of 135,934 loans had been paid in full. By the same date, VA had paid claims on only 12,574 defaulted loans. Although defaults cost the government more than $14,000,000, part of this amount was still subject to further recovery.

Readjustment Allowances.—The readjustment allowance program—established by the G.I. bill to provide financial assistance for unemployed, partially employed and low-income self-employed veterans—came to an end for most World War II veterans on July 25, 1949. By that date, more than 8,000,000 veterans had been on VA's rolls. They had obtained $3,000,000,000 in unemployment payments and more than $500,000,000 in self-employment allowances.

Two categories of veterans still might be eligible for readjustment allowances: (1) those who served a minimum of 16 days between Sept. 16, 1940, and July 25, 1947; had at least 90 days total service; and were discharged under conditions other than dishonourable after July 25, 1947; (2) those who enlisted or re-enlisted under the Armed Forces Voluntary Recruitment act, between Oct. 6, 1945, and Oct. 5, 1946.

Medical and Hospital Benefits.—A veterans' hospital construction program costing $750,000,000 was under way in 1949—to provide 67 modern new hospitals with a total of 38,600 beds. By Nov. 1, 1949, five new hospitals had been completed.

On Nov. 1, 1949, there were 97,336 patients in all VA hospitals and 11,692 in other than VA hospitals, or a total of 109,028.

Domiciliary care was available at 15 VA homes for veterans with a chronic condition incapacitating them from earning a living but requiring minimal medical attention. Nearly 17,000 veterans were in VA homes on Nov. 1, 1949.

Insurance.—In nine years, VA had issued more than 20,000,000 National Service life insurance contracts having a face value of nearly $156,000,000,000. On Oct. 1, 1949, more than one-third, or 7,190,000 policies, still were in force.

In 1949 VA announced that about 16,000,000 existing and former holders of National Service life insurance would share in a special dividend payment totalling $2,800,000,000. This would cover the time insurance was held in force from the time the policy first was taken out up to its anniversary date in 1948.

Pensions and Compensation.—Monthly rates of disability compensation continued to range from $15 to $150, depending on the degree of disability, plus statutory awards for amputations, blindness, etc., which might bring total payments to a maximum of $360 a month.

On Nov. 1, 1949, a total of 2,333,070 veterans of all wars were on VA's compensation and pension rolls. At the same time, 967,180 dependents of deceased veterans were obtaining death compensation and pension payments.

Living veterans on VA rolls, as of Nov. 1, 1949, included: Civil War, 20; Indian wars, 591; Spanish-American War, 97,042; World War I, 494,377; regular establishment, 51,266; and World War II, 1,689,774. Dependents of deceased veterans included 392,713 widows, 286,856 children and 287,611 parents.

(*See* also Law; Medical Rehabilitation of the Disabled; Tuberculosis.)

(C. R. Gy.)

Veterans of Foreign Wars: *see* Veterans' Organizations.

DISABLED AMERICAN VETERANS working at the Idento-Tag plant owned and operated by their organization in Chicago, Ill., where miniature auto licence plates were manufactured and mailed to 30,000,000 U.S. car owners in 1949

Veterans' Organizations.

United States.—During 1949 there was a continued drop in the over-all membership of veterans' organizations in the United States. Approximately 5,000,000 veterans were organized, a drop of 3,000,000 from the 1946 peak. Of this membership 80% was in the American Legion and Veterans of Foreign Wars.

American Legion.—The American Legion had in 1949 about 3,000,000 members. During the year it emphasized strong support of a broad housing program aimed at getting more homes at better prices for veterans; continued its drive against communism by urging repressive legislation and holding seminars for its members concerning the nature of communism; and advocated a number of plans to strengthen veterans' benefits.

At its 1949 convention held in Philadelphia, Pa., the Legion for the first time elected a World War II veteran as national commander, George N. Craig, of Brazil, Ind. The convention adopted a program supporting the United Nations, the European Recovery program and the North Atlantic treaty; advocating a Pacific pact and aid to nationalist China; advocating universal military training and civil control of atomic energy; supporting the Mundt-Nixon bill curtailing communist activities; denouncing discrimination in education on any basis except that of scholastic requirement; recommending an increased community service program; and increasing Legion dues by 25 cents, the increase to be used for rehabilitation.

Veterans of Foreign Wars.—This organization, with 1,130,000 members, the second largest veterans' group, also elected in 1949 for the first time as its national commander a World War II veteran, Clyde Lewis of Plattsburg, N.Y. The 1949 program of the V.F.W. again emphasized support of a federal bonus with a maximum of $4,000, increases in veterans' compensations and pensions and a strong national defense program. Drastic economies and a stable membership year enabled the V.F.W. to achieve a solid financial position.

Disabled American Veterans.—Under the leadership of its national commander, Gen. Jonathan Wainwright, the Disabled

American Veterans in 1949 increased its membership to 141,361, the largest in its history. Its 1949 convention, held at Cleveland, O., elected David M. Brown of Akron, O., as its new national commander and once again emphasized the D.A.V. program of increased aid to disabled veterans and their families. Strong attacks were made on cutbacks of the Veterans' administration hospital program.

American Veterans of World War II (Amvets).—Amvets at its 1949 convention held at Des Moines, Ia., elected as its new national commander, Harold Russell, handless star of the motion picture *The Best Years of Our Lives*. The two big issues facing the organization during 1949 were a proposed merger between Amvets and the other large World War II veterans' organization, the American Veterans committee, and a federal bonus for World War II veterans. While a majority of the national leadership were for a merger and against the bonus, rank and file delegates to the convention defeated both proposals. Amvets' new platform called for increased activity for veterans' benefits.

American Veterans Committee.—The membership of this organization dropped to about 30,000 in 1949, but through modified organizational policies it bettered its financial position. Its program again called for a full civil rights program, support of the European Recovery program and the North Atlantic treaty and increased housing and health legislation. It opposed a federal bonus.

Other Organizations.—In addition to the above organizations, numerous other groups were active. Most important of these were the Air Forces association, Army and Navy union, Jewish War Veterans, Catholic War Veterans, Regular Veterans association and Military Order of the Purple Heart. No new organizations of any importance were founded. The principal organizational trends of the year were: an effort at close liaison among the American Legion, V.F.W., D.A.V. and Amvets; a large increase in the number of local veterans' councils consisting of the active chapters of all veterans' groups in the area; an attempt to coalesce the individual divisional associations; the attempt to merge Amvets and A.V.C. into one large organization of World War II veterans.

One interesting development late in 1949 was a meeting held in Paris, Fr., to organize an international veterans' organization. No formal organization had been set up, but plans were made to do so during 1950. Veterans from the U.S., France, Great Britain, Italy, Belgium and the Netherlands and other non-Communist dominated countries were among those participating.

(Ri. A. B.)

Canada.—Although no spectacular gains in membership were recorded, all veterans' organizations in Canada were active throughout the year 1949. The Canadian Legion demanded conscription for Canada's reserve forces, recruiting of women for the reserve forces, outlawing of the Labor Progressive (Communist) party, deportation of any person of foreign birth who was found guilty of subversive activity and adoption of the red ensign as Canada's national flag. The Dominion Civil Service War Veterans' association called for more careful consideration of veterans in the civil service, including granting of permanent status to veterans listed as on a temporary status, extension of sick leave and benefits to veterans who had been wounded in active service and a federal medical plan for all federal civil servants. The Federation of British-Canadian Veterans of Canada appealed to the federal government for the same benefits for imperial veterans resident in Canada as for Canadian veterans, providing such imperials had lived in Canada prior to 1929. The year-old Royal Canadian Air Force association reported it had 7,000 members in 40 branches. Toward the end of the year the Canadian Women's Army Corps association, first women's veteran organization in the dominion, was formed.

(C. Cy.)

Other Countries.—In Sept. 1949 the membership of the British Legion was over a million; there were 5,500 branches, some of which were in the British communities abroad, and 3,000 branches of the women's section. The welfare work of the legion was effected through the 4,800 service committees comprised of members of the legion, and representatives of kindred bodies, such as the Soldiers', Sailors' and Airmen's Families association, the Forces Help society, the Red Cross and regimental associations.

These committees dealt with the problems of ex-service men and women, concerning pensions, employment and rehabilitation generally; in 1949 they gave advice and assistance on an average to 3,000 men and women every day.

The total cost of legion welfare and benevolent services in the year 1948–49 amounted to £1,135,197.

Sir Ian Fraser, and Lieut. Col. C. Gordon Larking were re-elected president and national chairman, respectively, at the British Legion annual conference held in May at Yarmouth.

(J. C. As.)

The British Empire Service league, representing more than 2,000,000 ex-service men and women throughout the British Commonwealth of Nations, held its tenth biennial conference at Ottawa, Ont., Sept. 11–17. Ex-servicemen's organizations, usually called legions, not only from all members of the Commonwealth of Nations and crown colonies but also from the independent republics of Ireland and Burma, were represented at the conference which was opened by Field Marshal Viscount Alexander of Tunis, grand patron of the Canadian Legion. He emphasized the need for the closest possible co-operation not only between the nations of the commonwealth but also with the United States of America and other people of good will. He welcomed the presence of representatives of the American Legion and the Veterans of Foreign Wars of the United States.

The most active European movement of ex-servicemen and that having the largest membership continued to be that of France. The *Union Française des Associations des Combattants* (U.F.A.C.) held its general annual assembly in Paris on Feb. 5–6, 1949. It consisted of 48 large and small associations with a total membership of 2,088,889. Léon Viala was re-elected chairman of the U.F.A.C.; Maurice de Barral, former secretary-general, became one of the four vice-chairmen; and the new secretary-general was Albert Morel.

In Poland three Communist-led ex-servicemen's organizations were merged in Warsaw on Sept. 1–2, 1949, in a single Union of Fighters for Freedom and Democracy (*Związek Bojowników o Wolność i Demokrację*) of which the premier, Józef Cyrankiewicz, became president and Gen. Franciszek Jóźwiak, chairman, both being members of the Politburo of the Polish United Workers' (Communist) party.

Veterinary Medicine.

Foot-and-Mouth Disease in Mexico.—The virulent epizootic of foot-and-mouth disease that broke out in the most congested livestock centre of Mexico in 1946 continued through 1949. Emissaries sent to Switzerland to study vaccine production established laboratories in Mexico which produced 1,500,000 doses of vaccine monthly, and a plan to vaccinate millions of animals three times a year was put into operation. Veterinarians in charge predicted reservedly that it would require two more years to bring the plague under a reasonable degree of control.

Q Fever.—Additional facts were published during 1948–49 about the rickettsial disease of man and animals, named Q fever for Queensland, Australia, where it was first identified as a specific infection. The disease was recognized in many widely separated parts of the world. Although seldom, if ever, diagnosed

CATTLE ROUNDUP in Equatoria, Sudan, prior to mass inoculations with antrycide, a vaccine developed by British scientists in the fight against cattle diseases. The vaccine became available in quantities in 1949 and was being tested against sleeping sickness; it was already known to be effective against rinderpest

clinically in farm animals, because of its mild nature, the disease concerned veterinary medicine because it is a grave human disease generally contracted by contact with farm animals, especially cattle. Q fever was proved to be chiefly an occupational disease affecting handlers of livestock and livestock products and consumers of raw milk derived from dairy herds exposed to dusty corrals.

The presence of the specific microbe found consistently in the dried excrement of insects and ticks indicted dust as one of the transmitting agents.

Ring Test for Bovine Brucellosis.—Because of the uncertainty of detecting the presence of the infection in every cow under all conditions, bovine brucellosis (Bang's disease or contagious abortion) continued to be a major problem of dairy cattle breeding and milk production. The new and simpler ring test developed in Denmark gained favour for collective eradication work during 1949. The test consists of adding one drop of hematoxylin-stained *Brucella* antigen with one cubic centimeter of the milk sample, shaking the bluish mixture well and incubating it for one hour at 37° C.

The diagnosis is made immediately after the incubation by reading the colour changes (ring) of the cream layer and of the milk beneath. The degrees of coloration indicate whether the animal is negative, suspicious, weakly positive, positive or strongly positive, and thus gives a clear insight to the extent of the infection in the herd without delay. Although the test had become useful for detecting the disease in individual cows its main purpose was testing the pooled milk of whole herds (from the milk cans) plus the pooled milk of each herd of a community set apart for area work on a large scale at minimum cost and effort and in the least possible time. Herds that passed three negative ring tests of milk made at intervals of four months and a blood test four months later were certified as brucellosis-free. Though widely discussed and generally approved, the ring test had not been officially sanctioned in the United States at the end of 1949.

International Veterinary Congress.—The 14th International Veterinary congress at London, Eng., in Aug. 1949 was devoted chiefly to the world's food supply which, admittedly, was becoming more and more precarious in the face of the multiplying populations, the inflexible acreage of arable land, soil erosion and diminishing returns and the mounting incidence of deficiency diseases among meat- and milk-producing animals.

Penicillin in Mastitis of Cows.—Although controlled trials and wide use of penicillin in treating bovine mastitis gave the drug a higher rating than the antiseptics (acridine dyes, oxide of silver, etc.) formerly employed, the results were lower than the original expectation. Evidence showed that cures might be expected in 83% of cases caused by *Streptococcus agalactiae* and 48% of those caused by *Staphylococcus aureus,* the two microbes commonly involved. Crude penicillin and sodium penicillin showed equal values. Directives on dosage and technique were lengthy.

X Disease.—During 1947–49, a noninfectious hyperkeratosis of cattle caused heavy losses in 32 or more states. Because of its unknown nature, the malady was named X disease. The mortality reported by the U.S. bureau of animal industry was 8%. More severe outbreaks investigated by the Texas agricultural experiment station caused a death rate approaching 100%. Although differing only in severity, the highly fatal form was named XX disease. Outbreaks occurred in widely separated places—Texas, Colorado, Florida, Virginia, New York, Wisconsin, *etc.;* the incidence for the whole country was not determined.

The new disease was an acute dermatosis with pronounced internal repercussions—fever anorexia, loss of weight and suppressed lactation. Associated with these systemic phenomena was an extensive keratosis. Among the suspected causes investigated were injurious plants, toxic soil, nutritional deficiencies, allergic reactions, fungi, bacteria, skin parasites, environment and DDT spraying of plants and animals. Reportedly, all these agencies had been excluded except the too free use of DDT sprays and powders.

Dosage of Phenothiazine in Horses.—The medicinal dose of phenothiazine, popular treatment against bloodsucking worm parasites in horses, was determined during 1949. Previously the imperial bureau of agricultural parasitology had indicated that this useful drug, for reasons unknown, was not as well tolerated by horses as by ruminants, and in the United States unaccountable fatalities from single doses were frequently reported. Dosage calculated on the basis of body weight as in lambs, calves and adult sheep and cattle was unsafe in the equine species both in single doses or in the low-level continuous dosage given ad libitum in the feed or salt lick of these ruminants. In Kentucky, where bloodsucking roundworms (*Strongylus, spp.*) remained a great menace to pastoral horses the safe, effective dose was established by the state experimental station by controlled trials in experimental horses of various ages. The single dose for adult horses is 30 g. and for weanlings and yearlings 15 g. In repeated doses 4 g. is given daily for 52 days for adults and 1 to 2 g. daily for 52 days was well tolerated for the younger animals.

Enterotoxaemia of Lambs.—An outstanding development was the evaluation of a vaccine for the prevention of pulpy kidney disease, or enterotoxaemia of lambs, which in recent years had been causing explosive death losses as high as 40% among lambs suddenly shifted from pasture to feed lot for fattening. The change from sparce to heavy rations was long known to be an aetiologic factor but the pathogenesis was not clear until pathologists of the Corn States Serum company's research laboratory working with pastoral and feeder lambs in Nebraska, demonstrated that *Clostridium perfringens,* Type D, a harmless inhabitant of the lower bowels, was capable of becoming dangerously virulent in lambs given free access to heavy grain rations too suddenly. The clue led to the production of an antiserum that confers a passive immunity and a bacterin (vaccine) that confers a permanent immunity beginning ten days after treatment. Extensive field trials since 1947 indicated that this grave infection is preventable.

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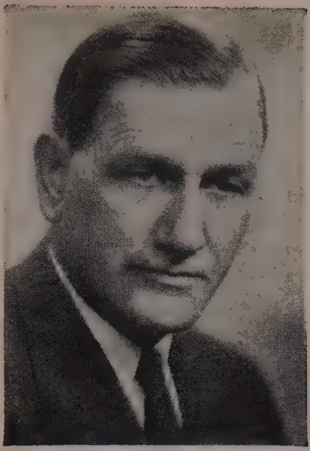
Virginia.

One of the 13 original states of the United States, Virginia is known as the "Old Dominion" and as the "Mother of Presidents." It is southernmost among the middle Atlantic states and has an area of 40,815 sq.mi., including 916 sq.mi. of water. Pop. (1940) 2,677,773, of which 35.3% was urban and 64.7% rural. On July 1, 1949, the bureau of the census estimated the state's civilian population at 3,102,000. Capital, Richmond (193,042 in 1940 and 232,000 in July 1948). Other major cities include Norfolk (144,332 and 170,000), Roanoke (69,287 and 71,000) and Portsmouth (50,745 and 57,200).



JOHN S. BATTLE, Democrat, elected governor of Virginia, Nov. 8, 1949

History.—The year 1949 saw steady progress in Virginia in the fields of public education, the care of the mentally diseased and improvement of the state's general health services. Special emphasis was devoted in the state's public school system to visual education techniques and to problems of vocational education. Under the sponsorship of Gov. William M. Tuck a $10,000,000 construction program was launched at the state's seven mental hospitals. The year was marked by four seizures of public utilities by the state under terms of the 1947 public utilities labour relations law, which permits the commonwealth to operate public service corporations that are threatened by strikes and other labour disputes. During the nationwide soft coal strike Governor Tuck exercised what he described as his "inherent powers" and seized a coal mine to provide fuel for state institutions and the general public. In December a legislative commission recommended sweeping changes in the state's tax structure to return a greater measure of governmental responsibility to the localities. At a Democratic primary election on Aug. 2, John S. Battle was nominated for governor by a plurality of 24,000 votes in a four-man race; he was elected governor at the general election in November to succeed Tuck on Jan. 18, 1950. Tuck was not eligible under the state constitution to seek re-election. L. Preston Collins was elected in November for another four-year term as lieutenant governor. G. Tyler Miller resigned on July 6 as superintendent of public instruction and was succeeded by D. J. Howard.

Education.—In 1948–49 elementary school enrolment was 442,611 with a teaching staff of 11,858; secondary school enrolment was 141,117 with a teaching staff of 5,113. The teaching staff also included 1,198 instructors in vocation education and 1,917 principals and head teachers.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the year ended June 30, 1949, 10,131 persons received $1,169,638 in general relief; 20,986 received $4,040,021 in old-age assistance; 8,516 families with 24,683 dependent children $3,093,331; 5,746 under the regular foster care program $703,566; and 1,569 blind $410,941. In 1949, 709,441 checks representing 869,655 weekly payments were written for civilian unemployment compensation, amounting to $13,887,336. This was more than double the amount of such compensation in 1948. Also, in 1949, 2,666,935 checks representing 336,862 payments for war veterans readjustment allowances were written for $7,278,095.

The average daily population of six penal institutions for adults was 4,739 and of four industrial schools for juveniles was 600 at the end of the fiscal year in June 1949.

Communications.—On Jan. 1, 1949, there were 8,891 mi. of highway in the state's primary system; on July 1, 1949, there were 38,758 mi. in the secondary system. During the year ended June 30, 1949, the state spent $53,651,250 on its highways, down fractionally from the previous year's expenditures. The total railroad mileage was 4,087,569 on Jan. 1, 1949. There were 529,493 telephones in Virginia on Nov. 30, 1949.

Banking and Finance.—On June 30, 1949, Virginia had 184 state banks with 56 branches and 313 national banks and branches. On June 30, 1949, deposits in national banks were $1,014,101,000 and assets $1,103,956,000. On June 30, 1949, deposits in state banks totalled $720,966,189, and assets $789,189,428. Resources on Dec. 31, 1948, of 15 industrial loan associations were $11,206,837; of 55 building and loan associations $52,816,298; of 26 credit unions $1,755,708.

For the fiscal year ended June 30, 1949, the state treasurer received revenues of $291,920,194, about 6% more than in the previous year; expenditures were $307,668,834. The gross debt on June 30 was $13,114,699; there was no net debt, because a sinking fund of $14,858,281 left an excess of $1,743,582. The fiscal year ended with a cash general fund surplus of $33,136,853 plus an invested surplus of $42,484,800.

Agriculture.—The 1949 crop year was unusually favourable for Virginia's growing livestock industry, which in 1948 accounted for more than half the total farm income. Pasture and hay crops experienced their best year, and grain crops also returned high yields. A new record yield of corn, amounting to 47 bu. per acre, was established. Yields of tobacco and peanuts were less than average, and fruit crops encountered their second successive poor year. New records were set for milk and egg production, and the poultry industry reached new highs in production of turkeys and broilers. The value of principal crops was estimated at 12% less than in 1948, when production was placed at $303,347,000. Cash receipts to Virginia farmers in 1949 from farm marketings were estimated at 9% below 1948, when cash income (including government payments) amounted to $451,902,000.

Table I.—*Leading Agricultural Products of Virginia*

Crop	1949	1948	Average 1938–47
Corn, bu	53,580,000	50,525,000	36,520,000
Wheat, bu.	8,732,000	9,194,000	7,904,000
Oats, bu.	4,650,000	4,891,000	4,650,000
Rye, bu.	375,000	480,000	495,000
Barley, bu.	2,700,000	3,036,000	1,975,000
Buckwheat, bu..	105,000	126,000	118,000
Tobacco, all types, lb..	137,262,000	143,790,000	128,170,000
Peanuts for nuts, lb..	187,650,000	237,800,000	176,183,000
Hay, all tame, tons	1,800,000	1,823,000	1,490,000
Apples, commercial, bu.	7,820,000	8,240,000	9,664,000
Peaches, bu..	1,953,000	1,209,000	1,490,000
Cotton, lint, bales	20,000	24,000	22,000
Potatoes, bu.	9,126,000	11,529,000	8,808,000
Sweet potatoes, bu.	2,880,000	3,510,000	3,364,000
Soybeans for beans, bu..	2,106,000	1,749,000	994,000

Manufacturing.—The value of products manufactured in Virginia increased to a new record of $2,774,963,000 in the year ended Dec. 31, 1947, an increase of 192% over the 1935–39 average of $949,873,000. Wage earners received $396,844,000 in 1947 and total salaries amounted to $92,315,000. The average factory employment in 1948 was 235,600, more than 30% above the prewar level. A steady trend away from the rural economy and toward greater industrialization was evident over most of the state in 1949.

Table II.—*Principal Industries of Virginia*

Industry	Value of products 1947	Value of products 1946
Tobacco products	$895,813,000	$863,819,963
Food and kindred products	361,603,000	383,086,617
Textiles and their products	581,826,000	495,570,099
Wood products	166,190,000	138,608,354
Paper and printing	192,208,000	136,376,046
Chemical products	194,294,000	109,121,470
Metals and machinery	78,634,000	54,159,941
Leather and its products	46,062,000	35,824,735

Mineral Production.—The production value of raw mineral resources in the year ending Dec. 31, 1948, was placed at $157,724,000, an increase of nearly 20% over the preceding year. Coal production was valued at $118,309,000 in 1948, when 19,620,000 short tons were produced. Petroleum production declined in 1948 to 33,000 bbl. Principal ores mined during 1949 were zinc (valued at $4,224,000 in 1948), titanium and manganese.

FILMS OF 1949.—*Colonial Williamsburg, Virginia; Monticello, Home of Thomas Jefferson; Mt. Vernon, Home of George Washington* (World in Color Productions). (J. J. KT.)

Virgin Islands. The Virgin Islands have the status of an organized but unincorporated territory of the United States, located 1,400 mi. southeast of New York and 40 mi. east of Puerto Rico. The three largest islands with an area of 133 sq.mi. are St. Croix (pop. 13,000, est. 1947); St. Thomas (16,200) and St. John (800). The chief cities are Charlotte Amalie, the capital on St. Thomas (9,801), Christiansted (4,495) and Frederiksted (2,498) on St. Croix.

The governor of the Virgin Islands until Nov. 30, 1949, was William Henry Hastie; thereafter Hon. Morris F. de Castro, government secretary, and second ranking executive official, served as acting governor.

History.—The Virgin Islands depend upon the outside world for much of their essential food, clothing and materials. Until this unavoidable expenditure abroad is balanced by the creation of marketable wealth or value in the islands, the economic problem cannot be solved. Three approaches, each complementary to the other, were being made to this problem. These included the development of tourism as a major industry, the production of specialty crops for export and the promotion of new industry.

The $10,000,000 federal public-works program was considerably advanced during 1949. The abattoir at St. Thomas was completed and the potable water supply project nearly completed. Several miles of road had been reconstructed in St. Thomas and St. Croix. Work on the new water-front highway in St. Thomas was expected to begin early in 1950, along with the installation of improved telephone communication in both St. Thomas and St. Croix.

Education.—A total of $431,570 was expended for public education in the Virgin Islands during the fiscal year ending June 30, 1949. Of this amount, more than $100,000 was made available by the U.S. government, chiefly for the purpose of supporting the veterans' education program. Enrolment in the public schools in the Virgin Islands totalled 4,401 of which 2,752 were enrolled in St. Thomas and St. John and 1,649 in St. Croix. The average cost of education per pupil in the public schools was $82.97. This included the daily school lunch service. The average monthly salary per teacher in St. Thomas was $105.79, in St. Croix, $81.24.

Finance.—The revenues of the municipality of St. Thomas and St. John during the fiscal year 1949 were $800,996, compared with $817,581.92 for the fiscal year 1948. Budget expenditures totalled $1,051,960 compared with $965,733 for the previous fiscal year. Income-tax collections decreased from $417,698 for 1948 to $324,748 for 1949.

For the municipality of St. Croix revenues were $328,007, an increase over the 269,474 for the previous year. Budgeted expenditures were $656,620. Congress appropriated $520,200 toward the expenses of local government in the two municipalities of the Virgin Islands. Income-tax collections in St. Croix amounted to $65,444 as against $103,069 for the previous year.

Trade and Communication.—A total of 298 commercial ships with a gross tonnage of 1,603,374 entered the port of St. Thomas during the fiscal year 1949, compared with 417 ships and a gross tonnage of 2,435,760 in 1948. During the calendar year 1948 goods valued at $9,465,562 were imported into the Virgin Islands compared with $9,031,743 for 1947. At the same time the value of exports decreased from $2,183,744 for 1947 to $1,698,037 for 1948.

The Pan American Airways and Caribbean Atlantic Airlines serve the islands with regular flights. There are good roads in St. Thomas and St. Croix and a few miles of roads in St. John. Radio-telephone service is available between the three islands and to continental United States.

Industry.—During 1949 two more small hotels were opened in St. Thomas.

About 386,915 proof gallons of alcoholic beverages were exported, compared with 224,236 proof gallons in 1948.

St. Croix produces the sugar crop of the islands. In 1949 the government-owned Virgin Islands company produced 4,579 tons of sugar, a slight increase over the previous year's yield. (M. F. DE C.)

Virgin Islands, British: *see* LEEWARD ISLANDS.

Viruses: *see* INFANTILE PARALYSIS; MEDICINE; PNEUMONIA.

Vishinsky, Andrei Y. (1883–), soviet government official, was born at Odessa. He studied law at the University of Kiev and started his political activity in 1902 by joining the menshevist wing of the Social Democrats. When the bolshevists took power in 1917, Vishinsky deserted the menshevists, served in the Red army for a year and joined the Communist party in 1920. Appointed attorney general of the R.S.F.S.R. (Russian Soviet Federated Socialist Republic) in 1923, he became professor of jurisprudence at Moscow university two years later. He was appointed people's commissar for justice in 1927, all-union deputy public prosecutor in 1933 and public prosecutor from 1935 to 1939 during the period of the ruthless liquidation of the anti-Stalinist opposition inside the All-Union Communist party. On March 31, 1940, Vishinsky was appointed vice-chairman of people's commissars. On Sept. 7, 1940, he became deputy commissar for foreign affairs. Vishinsky represented the U.S.S.R. in the Allied Mediterranean commission (1943–45) and, from the Potsdam conference onward, attended virtually all the important inter-Allied and United Nations meetings.

On March 4, 1949, he succeeded Vyacheslav M. Molotov as minister of foreign affairs. He took part in the Paris session of the Council of Foreign Ministers (May 23–June 20, 1949) and was the head of the soviet delegation at the 4th U.N. general assembly at Flushing Meadow, L.I., N.Y. Speaking at a meeting of the U.N. political committee on Nov. 10 he said that the U.S.S.R. was using atomic energy for such peaceful purposes as razing mountains and irrigating deserts.

Visual Education: *see* MOTION PICTURES.

Vital Statistics: *see* BIRTH STATISTICS; CENSUS DATA, U.S.; DEATH STATISTICS; INFANT MORTALITY; MARRIAGE AND DIVORCE; SUICIDE STATISTICS.

Vitamins. A report from the clinic of Randolph West of New York city cited 11 patients with pernicious anaemia, all of whom showed complete haematologic remission (recovery) following treatment with vitamin B_{12}. Five patients with the neurologic lesions of "combined system disease," often associated with this kind of anaemia, likewise showed marked improvement. Thus it seemed established that vitamin B_{12} is a completely effective therapeutic agent for pernicious anaemia.

Much was learned of the function of pyridoxine (vitamin B_6) in lower animals. Various claims were made for the usefulness of this vitamin in a variety of clinical conditions, such as muscular weakness, epilepsy, acne, nausea, vomiting of pregnancy and postradiation sickness. Evaluation and interpretation of these claims, as evidence for the occurrence of pyridoxine deficiency in man, were difficult and left much to be desired at the end of 1949.

Two papers described the chemical effects of pyridoxine on metabolism in man. It was significant that both papers were concerned with evidence for an influence of pyridoxine on protein metabolism and that both lines of evidence illustrated extensions to the human being of principles uncovered by investigations on lower animals, including the dog.

The first of these reports, by W. J. McGanity, E. W. McHenry, H. B. Van Wyck and G. L. Watt of Toronto, Can., was concerned with the effect of pyridoxine on blood urea concentration of women who exhibited severe nausea and vomiting during the first trimester of pregnancy. Following the lead from studies on animals, McGanity *et al.* determined the blood urea concentration in a series of healthy, nonpregnant women who were maintained on a constant protein intake, in a group of 40 healthy pregnant women, and in a group of 17 pregnant women exhibiting severe nausea and vomiting during the first trimester of pregnancy.

Oral administration of pyridoxine on each of three successive days did not alter the fasting urea levels of the healthy group but was followed by an increase in blood urea level of the patients with vomiting. These workers suggested that their results might be interpreted as presumptive evidence of pyridoxine deficiency in cases of nausea and vomiting of pregnancy.

The second paper, dealing with metabolic effect of pyridoxine in man, was a preliminary note by L. D. Greenberg, D. F. Bohr, H. McGrath and J. F. Rinehart of the University of California medical school which presented evidence that a load test of the amino acid, tryptophan, results in excretion of greatly increased amounts of an intermediate, xanthurenic acid, in human subjects on a pyridoxine deficient diet. These workers pointed out that their results demonstrated that man responds to pyridoxine deprivation in a manner similar to that of the mouse.

The need for extending these two important observations on metabolic effects of pyridoxine in man was obvious. In addition, it had become extremely important to search for evidences of metabolic derangements in the several clinical conditions for which responses to pyridoxine administration had been claimed.

One of the most intriguing problems in medical science continued to be the study of the cause, or causes, of cardiac failure. Approaches had been made from many angles, but to the end of 1949 the exact mechanism taking place in the cardiac muscle was not entirely known.

One approach to the problem had been the study of cardiac changes in various nutritional deficiencies. In rats fed a diet low in potassium, damage of the heart fibres results. Severe arterial and heart injury may also result from choline or vitamin B_6 deficiency in rats. Injury to the heart in pigs that had died of thiamine deficiency was also reported. In biochemical studies of hearts of guinea pigs with avitaminosis E, it had been reported that vitamin E was important in metabolism of the heart muscle. While studying the role of vitamin E in the nutrition and reproduction of cattle it was noted that cattle fed vitamin E-free rations throughout their entire life might die suddenly without evident cause. In one of the animals studied, the electrocardiogram showed abnormal changes, and microscopic studies of the heart revealed changes.

These studies of nutrition in relation to the heart muscle were stimulating, but even a cursory study soon revealed that many more experimental studies were necessary before definite conclusions could be drawn relative to human conditions. It was reported, without satisfactory supporting data, that vitamin E was beneficial in patients with coronary heart disease. These preliminary reports were not confirmed by other workers —rather, the evidence was contrary to the original claims. In one study of 22 patients treated, 11 had congestive heart failure and 5 had angina pectoris; the remaining 6 had hypertension or arteriosclerotic heart disease or both, without failure or angina. These patients were given 300 to 400 mg. of vitamin E daily in divided doses. Then the patients were followed about three to six months and electrocardiograms were made at intervals of two to four weeks. Six of the 22 patients were very questionably improved and the remainder showed no change or they became markedly worse.

The incidence of vitamin deficiency in the general population of the United States continued to be a much debated subject with few facts to support the debate. Of considerable interest, therefore, was a report by W. B. Bean, R. W. Vilter and M. A. Blankenhorn, who had made a continued effort over a period of more than 13 years to diagnose all cases of pellagra admitted to the Cincinnati General hospital.

Their figures revealed a startling decline in the incidence of this disease beginning in about 1939 and continuing for ten years. An attempt was made to correlate this decline with various factors such as food rationing, alcohol consumption, bread enrichment, nutrition education and popular consumption of vitamin preparations. None of these seemed to have initiated the trend although some may have helped to perpetuate it. There was a good inverse correlation between the incidence of the disease and the general economic level of the population. It would seem a fair assumption that ability to purchase a more adequate diet was the principal factor initiating the virtual disappearance of this disease. (*See* also BIOCHEMISTRY; CHEMISTRY; CHEMOTHERAPY; FISHERIES; FLOUR; MEDICINE; NUTRITION, EXPERIMENTAL.)

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(F. J. SE.)

Vocational Rehabilitation, Office of. Physically and mentally handicapped civilians of working age requiring vocational rehabilitation services in order to obtain or retain employment commensurate with their potential capacities numbered at least 1,500,000 in the U.S. in 1949, not including veterans of the armed forces with service-incurred disabilities. The number is virtually static by reason of about 250,000 persons disabled each year so severely as to require rehabilitation. All 48 states, the District of Columbia, Puerto Rico and Hawaii maintained partnership with the Federal Security agency's office of vocational rehabilitation to provide the necessary services and facilities. Territorial funds were lacking to carry out Alaska's federally approved plan of operation.

There were during the year 51 general rehabilitation agencies administered by the state or territorial boards of vocational education through divisions of vocational rehabilitation. In addition, in 35 states and territories, there were separate agencies authorized by law to provide vocational rehabilitation services for blind persons. In 17 states general rehabilitation agencies provided services for the blind as well as for other types of handicapped clients.

The states and territories actually operated the programs, purchasing rehabilitation services from existing facilities and necessary medical care from general practitioners, specialists, clinics, hospitals and other sources, either public or private, available in the communities. The federal government, through the office of vocational rehabilitation in the Federal Security agency, assisted the states and territories through financial grants-in-aid, establishment of standards of service and technical aid. The federal government assumed all necessary administrative costs incurred by the states as well as their expenditures for guidance and placement of disabled individuals. Medical examinations and treatment, training and the costs of other services were shared equally by the states and the federal government.

From July 1943 through June 1949, a total of 277,059 disabled men and women were rehabilitated by the state-federal program to qualify for, to take and to perform useful work. This figure compares with a total for the preceding 23 years of 210,125 under limited legislative authority. On an average yearly basis, program gains during 1944–49 represented an increase in successful rehabilitations of more than 400% over the figure for the previous 23 years.

For the year ended June 30, 1949, 69,277 disabled people were prepared for and placed in suitable employment. Of these, the number performing their jobs to their own satisfaction and that of their employers was 58,020, an increase of 9% over fiscal 1948. The remaining 11,257 had completed their rehabilitation to the point where they were employed but were being observed for a reasonable period to make certain that their adjustment would be complete. This represented a 22% increase over the previous year. During fiscal 1949, 3,166 blind persons and 3,895 persons with other visual defects were rehabilitated into suitable employment. All of these figures represented record highs for one year.

For the fiscal year 1949, the annual rate of earnings for the rehabilitated group upon application for services—approximately $18,000,000—rose to $97,000,000 during the first year after rehabilitation, an increase of approximately 400%. The post-rehabilitation earnings did not include those of about 7,700 rehabilitants who were engaged in farming or family work and whose earnings were not reported.

Thirteen thousand of the successful rehabilitants during 1949 were employed at the time they applied for services but required rehabilitation for one of the following reasons arising from their disabilities: they were in danger of losing their jobs; were in jobs that were hazardous to them or to their fellow workers; were working only part time; or were in otherwise unsuitable employment. (*See* also MEDICAL REHABILITATION OF THE DISABLED; VETERANS' ADMINISTRATION [U.S.].) (M. J. SY.)

Wages and Hours.

Total wage payments in the United States declined 8.75% from Sept. 1948 to Sept. 1949, as measured by pay rolls in manufacturing industries. This compared with an almost equal decrease in manufacturing employment (8.3%) in the same period and constituted a return to the employment and pay roll levels of 1947. Total employers' disbursements, including salaries and wages, amounted to $11,417,000,000 in Sept. 1949, or 0.49% less than for the same month in 1948.

"NERVOUS CATS," a 1949 cartoon by Herblock which appeared in the *Washington Post*

Table I indicates the trend of real wages in 1949 as compared with 1948. Based upon 1949 averages, the index of real wages in Sept. 1949 was 136.5—equal to the peak month of the previous year. Average real wages for the first nine months of 1949 were 4.3% above the comparable months for 1948, reflecting a slight drop only during the "business recession" of the spring months.

Coal miners lost their position as recipients of the highest "take-home pay." Those classified as workers in products of coal and petroleum earned a weekly average of $72.04 in 1949. Building construction workers received a weekly average of $71.91, while one subdivision of construction workers—plasterers and lathers—received $83.13. The lowest weekly payments were made to hotel employees ($32.94), but this figure did not represent total earnings for that group, for it did not include tips, room, board or uniforms. Employees in tobacco processing plants were second lowest, with $38.63.

Data in Table II indicate that average weekly earnings increased in slightly more than half of the recorded industries, but weekly earnings for manufacturing industries as a whole declined approximately 1%. Wages were slack in durable goods industries, but somewhat improved in nondurables. Average

Table I.—*U.S. Real Wage Indexes*

(1939=100)

	Consumers' price index		Index of average weekly manufacturing wages		Index of real wages	
Months	1949	1948	1949	1948	1949	1948
Jan.	171.9	169.8	232.6	218.2	135.3	129.4
Feb.	170.0	168.5	231.4	215.6	136.1	128.0
March	170.5	167.9	229.4	218.2	135.0	130.0
April	170.7	170.3	225.5	217.1	132.1	127.5
May	170.2	171.5	226.7	217.4	133.2	126.8
June	170.6	172.7	228.5	221.5	133.9	128.3
July	169.5	174.7	229.0	226.2	135.1	129.5
Aug.	169.8	175.5	229.1	230.8	134.9	131.5
Sep.	170.6	175.5	232.8	231.2	136.5	131.7
Oct.	...	174.6	...	233.0	...	133.5
Nov.	...	173.2	...	233.0	...	135.1
Dec.	...	172.4	...	235.3	...	136.5

Source: Computed from data in *Monthly Labor Review*, United States bureau of labour statistics.

Table II.—*Average U.S. Weekly Earnings, Average Weekly Hours, and Average Earnings Per Hour In Major Industries*

Industry	Average weekly earnings August 1949	1948	Average weekly hours August 1949	1948	Average hourly earnings August 1949	1948
ALL MANUFACTURING	$54.66	$55.06	39.1	40.1	$1.398	$1.373
Durable Goods	57.74	58.50	39.2	40.6	1.473	1.441
Nondurable Goods	51.31	51.07	38.9	39.5	1.319	1.293
Iron and steel	55.95	61.20	36.3	40.5	1.539	1.514
Electrical machinery	56.96	56.94	39.2	39.9	1.453	1.427
Nonelectrical machinery	59.82	61.42	39.1	41.0	1.530	1.498
Transportation equipment	65.28	63.43	39.3	39.3	1.661	1.614
Automobiles	67.95	64.57	39.9	38.9	1.703	1.660
Nonferrous metals	54.24	60.78	39.0	40.5	1.518	1.501
Lumber and wood products	53.42	54.78	40.9	42.5	1.306	1.289
Furniture and fixtures	49.61	48.64	40.4	40.6	1.228	1.198
Stone, clay and glass	54.13	54.98	39.6	41.4	1.367	1.328
Textile-mill products	44.37	45.36	37.6	38.6	1.180	1.175
Apparel, etc.	41.79	43.98	35.6	36.5	1.174	1.205
Leather and leather products	42.00	42.71	37.2	38.0	1.129	1.124
Food and food products	52.92	50.88	41.7	41.2	1.269	1.235
Tobacco manufactures	38.63	37.65	38.9	39.1	.993	.963
Paper and allied products	56.27	56.76	41.9	43.1	1.343	1.317
Printing and publishing	70.89	67.15	38.4	39.2	1.846	1.713
Chemicals and allied products	58.83	57.39	40.6	41.2	1.449	1.393
Products of coal and petroleum	72.04	72.42	40.2	41.5	1.792	1.745
Rubber products	57.42	60.33	38.1	40.3	1.507	1.497
Miscellaneous manufacturing industries	48.52	49.94	39.1	40.7	1.241	1.227
NONMANUFACTURING						
Coal mining						
Anthracite	43.85	72.77	24.0	38.3	1.827	1.900
Bituminous	49.59	76.48	26.1	39.0	1.900	1.961
Metalliferous mining	58.66	62.88	39.5	43.1	1.485	1.495
Street railways and buses	64.60	62.31	44.8	46.5	1.442	1.340
Telephone	51.61	48.42	38.4	39.4	1.384	1.229
Telegraph	63.64	62.56	45.1	45.5	1.411	1.375
Gas and electric utilities	64.20	61.17	41.5	41.9	1.547	1.460
Wholesale trade	57.36	55.87	40.8	40.9	1.406	1.366
Department stores and mail-order houses	38.96	37.86	37.5	37.9	1.039	.999
Hotels	32.94	31.85	44.1	44.8	.747	.711
Building construction (private)	71.91	70.91	37.2	37.8	1.931	1.874

Source: *Monthly Labor Review*, United States bureau of labour statistics.

earnings exceeded $50 per week in approximately 69% of the classified industries in 1949 as compared with 71% in 1948. Average weekly pay was greater than $60 in 28.1% of the industries in 1949 as against 45% in the preceding year. This is partly accounted for by an average reduction of one hour in the manufacturing work week.

The greatest increase in take-home pay was that of 6.6% in the telephone industry. The 5.6% increase in the printing and publishing industry was second in size. The greatest drops in weekly earnings (anthracite and bituminous coal mining) were attributable principally to loss of working time through strikes.

The greatest hourly increase was also in the telephone industry—12.6%. The only declines in hourly wage rates were in coal and metalliferous mining and in apparel manufacturing. The average rate of increase in hourly wages slowed down from 9.1% in 1948 to 1.8% in 1949.

Table III shows shifts in hourly earnings in selected industries over a five-year period. The net increase for all manufacturing industries was 37.6%, while the greatest proportionate increase was 65.9% in the textile industry. The smallest change was in tobacco products industries.

The July 1949 average hourly rate for common labour (in road building) was $1.16, compared with $1.04 in 1948 and 47 cents in 1941. Farm wages in July 1949 averaged 74 cents per hour not including board. The 1948 farm wage was 78 cents.

Table III.—*Rise in Hourly U.S. Earnings Rates*

(August rates)

Industry	1944	1945	1946	1947	1948	1949	Index, 1949 (1941=100)
ALL MANUFACTURING	$1.016	$1.025	$1.112	$1.236	$1.373	$1.398	181.5
Durable goods	1.111	1.114	1.186	1.312	1.441	1.473	172.7
Nondurable goods	.865	.908	1.036	1.158	1.293	1.319	194.0
Iron and steel	1.076	1.109	1.222	1.376	1.514	1.539	175.5
Machinery (nonelectrical)	1.120	1.136	1.246	1.377	1.498	1.530	177.7
Automobiles	1.262	1.236	1.373	1.501	1.660	1.703	156.1
Lumber and allied products	.803	.816	.928	1.048	1.289	1.306	218.4
Textile products	.711	.771	.924	1.032	1.175	1.180	203.1
Food and food processing	.844	.882	1.015	1.140	1.235	1.269	186.9
Tobacco products	.715	.761	.885	.951	.963	.993	188.4
Rubber products	1.102	1.119	1.295	1.445	1.497	1.507	174.2
NONMANUFACTURING							
Coal mining:							
Anthracite	1.179	1.331	1.598	1.780	1.900	1.827	181.6
Bituminous	1.189	1.248	1.466	1.787	1.961	1.900	183.0
Wholesale trade	.939	1.013	1.148	1.258	1.366	1.406	173.2
Private building	1.323	1.383	1.462	1.668	1.874	1.931	189.7

Source: Compiled and computed from data in *Monthly Labor Review*, United States bureau of labour statistics.

Compared with 1948, 1949 was a year of considerably greater stability. Hourly wages continued their upward trend, with the slight decline in average weekly earnings attributable to a reduction in the length of the work week. In conjunction with price trends, the net effect was an increase in real wages.

(D. J. H.)

Great Britain.—Meeting early in September, before devaluation of the pound sterling was announced, the British Trades Union congress reaffirmed its support for the policy of restraint in wage claims; and the general council reasserted this attitude with increased insistence after devaluation had been made public. At this time a number of the principal trade unions had important wage claims under negotiation, including the Confederation of Shipbuilding and Engineering unions and the Civil Service Clerical association. The National Union of Railwaymen had just had its claim for an all-round advance rejected by the special tribunal to which it had been referred and there was talk of strike action, or of a "work to rule" movement; but the delegate conference of the union decided to limit its action for the present to a renewed demand for an improvement in wage rates for the lowest paid grades, for which an offer had actually been made by the British Railways executive before the major issue was referred to the tribunal.

During the first eight months of 1949 wage changes were less than during the corresponding months of 1948. The principal groups to receive advances were the agricultural workers, the cotton operatives, the postal workers and the building trades. The total advances recorded in the official statistics up to the end of August amounted to £765,000 a week spread among 4,415,000 workers, as compared with £1,219,000 and 4,848,000 workers in the corresponding months of the previous year. There were no important changes in standard hours of work. The official index of wage rates (June 1947=100) stood at 109 in Aug. 1949, as against 106 a year previously.

For weekly earnings, as distinct from wage rates, the latest current figures were for April 1949. For the trades covered by the returns the over-all average was 119*s.* 4*d.*, as compared with 114*s.* in April 1948 and 53*s.* 3*d.* in Oct. 1938, which is used as the *datum* line for reckoning the percentage changes since the beginning of World War II. This gives a rise of 124% in April 1949, and of 114% a year earlier. Over the same period, average hours worked (including overtime) had fallen from 46.5 in Oct. 1938 to 45.3 in April 1949 and the same a year earlier. The reduction in actual hours worked was substantially less than the reduction in the standard working week, as more overtime was being worked. Most trades in 1949 were working a five-day week, with overtime, except where special reasons existed for weekend work. These statistics of wages and hours did not include agriculture, coal mining, railways or the distributive trades, and covered only a minority of transport workers. They were, however, sufficiently representative of manufacturing industries and of most public utility services.

These general averages conceal both the differences between skilled and less skilled workers and the differences between industries. In all occupations there was a considerable narrowing of the real differentials paid for the more skilled work, especially under time-work conditions. This was mainly the effect of flat-rate advances to all workers in an industry irrespective of skill. In pieceworking occupations some, but by no means all, skilled workers were able to increase their earnings enough to offset the decline in relative margins as measured by wage rates; but in some cases less skilled workers were able to increase their earnings more easily than the more highly skilled. There was considerable discontent among a number of groups of highly skilled time-workers, including supervisory grades, where their earnings fell below those of pieceworkers ranking below them in the traditional hierarchies.

In April 1949 the industries recording the highest average earnings were, for adult men, automobile manufacture and newspaper printing (both 170*s.*), and for women, passenger road transport (108*s.*) and automobile manufacture (97*s.*). The lowest earnings were, for men, in linen and jute (108*s.*) and local authority industrial services (114*s.*), and for women, in linen (61*s.*) and laundries (66*s.*). For men, the great majority of industries fell within the range 148*s.*—127*s.*, and for women, within the range 80*s.*—70*s.* After devaluation there was some talk of instituting a minimum wage of 100*s.* a week for adult men, with a lower minimum for women workers; but this, if it meant a minimum *rate* of 100*s.* for the standard working week, would involve a very considerable rise in the total wages bill. In engineering, relatively well paid, the bottom rate was only 92*s.* and on the railways the average for a number of the lowest grades was 92*s.* 6*d.* (*See* also AGRICULTURE; BUSINESS REVIEW; CENSUS DATA, U.S.; LABOUR UNIONS; PRICES.) (G. D. H. C.)

Wales: *see* GREAT BRITAIN & NORTHERN IRELAND, UNITED KINGDOM OF.

Walnuts: *see* NUTS.

War, Law of: *see* INTERNATIONAL LAW.

War Assets Administration: *see* GENERAL SERVICES ADMINISTRATION.

War Crimes.

Western Europe.—The most important war crimes trial of 1949 ended April 14, when a United States tribunal at Nuernberg found 19 of 21 nazi former ministers and government officials guilty of planning aggressive war, war crimes and crimes against humanity. The sentences in this so-called "Wilhelmstrasse trial," which had proceeded for 17 months, ranged from 4 to 25 years in prison but time already spent in captivity was to be deducted from the terms. Otto Meissner, chief of the presidential chancellery, and Otto von Erdmannsdorff, ambassador to Hungary, were acquitted. Found guilty were Gottlieb Berger, chief of the SS main office; Edmund Veesenmayer, reichsminister plenipotentiary; Hans Lammers, chief of the reich chancellory; Hans Kehrl, chief of the armaments and war production planning office; Paul Koerner, Hermann Goering's deputy for the four-year plan; Paul Pleiger, chairman of the reich coal association; Lutz von Schwerin-Krosigk, reich finance minister; Wilhelm Keppler, Adolf Hitler's special economic adviser; Ernst Woermann, ministerial director of the political division of the foreign office; Richard-Walther Darré, food and agricultural minister; Otto Dietrich, state secretary of the propaganda ministry; Karl Rasche, head of the Dresdner bank; Gustav Steengracht von Moyland, state secretary of the foreign office, Ernst von Weizsaecker, ambassador to the Vatican; Walter Schellenberg, chief of the combined military intelligence service and SS official; Ernst Wilhelm Bohle, chief of the nazi party's foreign organization; Emil Puhl, vice-president of the Reichsbank; Karl Ritter, ambassador for special assignments; and Wilhelm Stuckart, state secretary, ministry of the interior.

The report of the United States military government in Germany for April 1949 described this trial as the "last of the Nuremberg War Crimes Cases." U.S. war crimes tribunals in Europe had tried 1,873 persons, of which 459 had been sentenced to death, 1,110 to prison and 304 acquitted.

The British government announced on May 5 that the charges against Field Marshal Karl von Rundstedt and Gen. Adolf Strauss would be dropped, but Field Marshal Erich von Manstein would be tried. There would be no further war crimes trials in the British zone. No application for extradition of war criminals had been accepted since Sept. 1, 1948, and none for traitors and collaborators since March 1, 1949. British war crimes tribunals in Germany had tried 937 persons, of which 230 had been sentenced to death, 447 to prison and 260 acquitted. The trial of Otto Abetz, German ambassador to the Vichy government, by a French military court resulted in his sentence to 20 years' hard labour on July 22. German courts were henceforth to be responsible for trials of crimes against humanity in western Germany whether involving German, Allied or United Nations persons.

Far East.—The Far Eastern commission decided on Feb. 24 that there would be no further international military tribunals in the far east and recommended on March 16 and 31 that any further war crimes trials in national tribunals be decided upon by the end of June and concluded if possible before the end of Sept. 1949. The United States state department announced on Jan. 13 that the 11 former enemies of Japan, including the U.S.S.R., had agreed in 1945 to exempt the Japanese emperor from trial for alleged war crimes. The trials of Adm. Soemu Toyoda, chief of the Japanese naval staff, ending in his acquittal on Sept. 6, 1949, and of Osamu Satano, sentenced on Oct. 19, 1949, to five years' imprisonment for beheading, under orders, a captured U.S. flyer, were the last U.S. trials in the far eastern area. Gen. Douglas MacArthur announced the end of war crimes trials on that date saying 4,200 Japanese had been convicted by seven allied nations in the far eastern area and 720 had been executed. About 100,000 suspects had been questioned.

Eastern Europe.—In some cases in eastern Europe, war crimes charges appear to have been mixed with charges of conspiracy and espionage against the local government. This was true of the trial in Hungary of former Hungarian Minister of the Interior Laszlo Rajk and seven others, resulting in confessions and sentencing of the accused in Sept. 1949. This trial resembled that of Joseph Cardinal Mindszenty and others in Hungary and of 15 pastors in Bulgaria on similar charges during the winter of 1949, and of members of the Social Democratic Youth organization in the soviet section of Berlin in June 1949 for distributing a paper with "slanderous attacks on the Soviet Union." The Hungarian and Bulgarian proceedings and similar proceedings in Rumania were protested by western powers on the ground that they were conducted in a way to violate civil liberties guaranteed in the peace treaties with those countries. The United Nations general assembly asked in Oct. 1949 for an advisory opinion of the International Court of Justice on the applicability of the procedures specified in these treaties.

These trials had in reality no more to do with war crimes than did the sentencing of F. Klecka for 20 years by a U.S. military court in Munich, Ger., in Feb. 1949 with lesser sentences to others in a Czechoslovak spy ring, and the sentencing for three months of Max Reimann, Communist leader of West Germany, by a British tribunal at Duesseldorf in February 1949 for violent speeches against occupation policy. The latter sentence was questioned in the British parliament on the ground that it curtailed freedom of speech and by the German constitutional convention, then meeting in Bonn, of which Reimann was a member. The case became ironic when Reimann's son escaped from the soviet zone to enjoy freedom in the western zones. While trials for espionage and sabotage against military governments, and for sedition and treason against national governments, would doubtless continue, trials for war crimes, in the sense used in the Nuernberg charter, had by the close of 1949 come to an end as far as World War II was concerned.

Statistics of Trials.—The United Nations War Crimes commission had by 1949 completed its work begun in 1943. It had published 15 volumes of *Law Reports of the Trials of War Criminals.* The final volume analyzes the law and procedure in the 89 cases reported and 92 cases cited in this series. These cases were selected from 1,911 trial records received by the commission. The commission also published its own history with statistical data and critical analyses of the law and procedure developed in its own work and the work of the tribunals. The war crimes tribunals of the United States, Australia and western European countries held more than 2,000 trials about equally divided between the European and far eastern areas. These trials involved more than 6,000 persons resulting in about 1,500 death sentences, 3,500 prison sentences and 1,000 acquittals. Data on trials by the eastern European countries and China were lacking, but the numbers were probably no less. More than 10,000 persons of the axis powers were tried for war crimes and probably 80% were found guilty. The United Nations War Crimes commission examined more than 8,000 charges involving 36,000 persons and issued lists of more than 20,000 persons which it thought should be tried. These lists were probably incomplete and many listed were never tried. Lord Wright of Durley, chairman of the United Nations War Crimes commission, expressed the opinion that if 10% of the actual war criminals were tried, the results would not be unsatisfactory. (*See* also INTERNATIONAL LAW.)

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War Prisoners: *see* PRISONERS OF WAR.
War Savings Stamps: *see* POST OFFICE.

Washington.

A state in the extreme northwest United States, popularly known as the "Evergreen state," Washington was admitted to the union Nov. 11, 1889. Total area: 68,192 sq.mi., of which 66,977 sq.mi. are land; pop. (1940): 1,736,191; native 1,525,812; foreign born 210,379; urban 921,969. An estimate as of July 1, 1949, by the U.S. census bureau placed the population of the state at 2,582,000, an increase of 48.7 since 1940. Capital: Olympia, 16,300 (est.). The 1940 census and 1949 estimates for the three largest cities were, respectively: Seattle, 368,302 and 488,980; Spokane, 122,001 and 170,000; Tacoma, 109,308 and 150,750.

History.—In 1949 the 31st legislature of the state of Washington, the senate of which was Republican and the house, Democratic, enacted new administrative codes in the fields of fisheries, game, game fish, fluid milk and fluid milk products. New administrative agencies created by the legislature were a state power commission, a public service commission (replacing the department of transportation and public utilities), a department of fisheries and a marine employee commission. Authorized by constitutional amendment approved by the electorate in 1948, the legislature increased the salaries of elective state officers. Persons who were members of Communist or fascist organizations were made ineligible for temporary permits to teach in the state. The state superintendent of public instruction was instructed to prepare the proper oath or affirmation to be tendered applicants for such permits. All of the state-supported universities and colleges were authorized to train teachers for all public schools, but only the University of Washington, Seattle, and the State College of Washington, Pullman, were to grant superintendent certificates. The colleges of education were empowered to grant the degree of Master of Education.

GROUND FISSURES in Seattle, Wash., caused by the earthquake which rocked the Pacific northwest, April 13, 1949, causing the death of 8 persons as well as severe property damage

The state's first comprehensive Fair Employment Practices act was enacted. Physicians, dentists and similar professional persons were forbidden to pay or receive "rebates, or refunds, or unearned discounts."

The state supreme court reaffirmed a previous decision denying school districts the authority to transport children to parochial schools in public school district school buses.

On April 13, 1949, western Washington, particularly the Puget sound area, experienced the worst earthquake shocks in its history.

The chief state officers for 1950 were: governor, Arthur B. Langlie; lieutenant governor, Victor A. Meyers; secretary of state, Earl S. Coe; treasurer, Tom Martin; auditor, Cliff Yelle; attorney general, Smith Troy; state superintendent of public instruction, Pearl Wanamaker (elected on nonpartisan basis); state commissioner of public lands, Jack Taylor; state insurance commissioner, William A. Sullivan.

Education.—During the school year 1948–49, total enrolment in public schools was 392,273 and average daily attendance was 343,211. The total certified personnel numbered 15,359 and the average salary was $3,384.66. Total current operating expenses were $84,986,541.55. A total of 1,478 schools were maintained in 605 districts. There were slight decreases in the enrolments at the University of Washington and at the State College of Washington, but increases at the three colleges of education.

Social Insurance and Assistance, Public Welfare and Related Programs.—During the period Oct. 1948 through Sept. 1949, inclusive, public assistance in the state, including federal direct expenditures and state aid, cost $96,783,234.40. An average of 137,389 persons received assistance to the total amount of $92,964,261.42. An average of 28,278 received general assistance to the amount of $11,077,724.31. A total of $12,681,464.26 was spent on health care. An average of 70,381 old persons received a total of $51,837,800.99. An average of 38,349 children received a total of $16,728,843.40. An average of 795 blind persons received a total of $638,655.57. During the last months of 1949 the state director of social security tried to reduce welfare payments, except those to the blind, below the amounts authorized by law. His reason was inadequate funds. A decision of the superior court of Thurston county invalidated the reductions planned for 1949.

On Oct. 31, 1949, ten state charitable institutions had a total population of 10,372 and four correctional institutions had 2,168 inmates. Both programs cost the state $18,010,257.65 during the fiscal biennium of April 1, 1947, to March 31, 1949.

Communications.—Railroad mileage for the state was 5,227 in 1946. The total mileage of primary and secondary state highways of the state was 6,384.35 in 1949; the total mileage of roads on the federal-aid highway system was 9,712.15 (overlap state and county roads); state highways not receiving federal aid amounted to 442.27 mi.; the total mileage outside the corporate limits of cities and towns was 5,983.62. From Jan. 1, 1949, to Sept. 30, 1949, the state spent $14,060,786.88 for highway construction. On Jan. 1, 1948, there were 605,307 telephones in the state.

Banking and Finance.—In 1949 real and personal property assessed for purposes of taxation amounted to $1,898,642,513. On March 31, 1949, the bonded indebtedness of $660,000 and outstanding warrants amounting to $9,371,499.84 were covered by investments and cash balances. The treasurer's cash balance was $93,210,399.58. For the year ending March 31, 1949, total receipts were $280,387,211.31 and disbursements were $308,587,280.92. Cash transfers were $66,205,917.77.

On June 30, 1949, 124 banks in the state reported a total capital of $41,830,700; capital surpluses and undivided profits of $107,902,246; deposits of $2,012,991,833; and total assets of $2,144,107,079.

Agriculture.—In 1945 the state had 79,887 farms, whose acreage totalled 16,719,870, and of these, 4,207,000 (est.) were in 1948 devoted to 52 crops. In 1948 agricultural production was valued at $657,704,000. Field crops accounted for $258,168,000; fruits, nuts and berries $113,066,000; vegetables $20,579,000; livestock and livestock products $244,810,000; and specialties $21,081,000. The total farm value of crops for 1949 was estimated at $600,000,000.

Table I.—*Leading Field and Fruit Crops of Washington*

Crop	1949	1948	Average, 1938–47
Wheat, bu.	57,511,000	79,268,000	57,787,000
Apples, bu.	31,820,000	25,760,000	28,034,000
Hay (all), tons	1,571,000	1,759,000	1,773,000
Potatoes, bu.	10,080,000	12,600,000	8,449,000
Pears, bu.	7,300,000	5,555,000	7,227,000
Hops, lb.	19,370,000	22,704,000	15,086,000
Peas (100-lb. bags)	1,583,000	1,950,000	2,850,000
Strawberries (crates)	920,000	980,000	
Oats, bu.	6,815,000	6,290,000	7,480,000

Manufacturing and Trade.—In 1948 total income payments to persons in the state amounted to $3,578,000,000 in contrast with $3,345,000,000 in 1947 and $1,100,000,000 in 1940. Average per capita incomes for 1947 and 1948, respectively, were $1,534 and $1,536. In 1947 there were 3,410 manufacturing establishments employing a total of 144,324 persons, who were paid a total of $438,020,000. An average number of 123,488 production workers were employed for 237,418,000 man-hours, and received a total of $354,596,000 in wages. The value added by manufactures was $874,036,000.

Table II.—*Principal Industries of Washington*

Industry	No. of establishments	Value
Lumber and lumber products (except furniture)	911	$279,458,000
Food and kindred products	752	148,904,000
Paper and allied products	63	137,670,000
Transportation equipment	130	76,579,000
Primary metals industries	62	63,319,000
Printing and publishing	401	42,680,000
Fabricated metals	198	26,719,000
Machinery (except electrical)	181	25,233,000
Stone, glass and clay products	167	17,203,000
Chemicals and allied products	115	15,570,000

The output of lumber in 1948 was 3,627,000,000 bd.ft., and of plywood, in which the state leads in production, was 1,964,000,000 sq.ft.

In 1948 commercial fisheries reported a total production of 136,474,360 lb., which had a value of $22,187,690 to fishermen.

Mineral Production.—Mineral production, which in 1946 amounted to $33,076,000, was estimated at $40,000,000 for 1947 and $50,000,000 for 1948. The total value of the leading metals was $7,313,398 in 1947 and $11,171,715 in 1948. In 1948 the state's 623 mines, pits and quarries employed from 2,200 to 2,600 workers per month and had a pay roll of $8,500,000 for the year. (H. J. De.)

Table III.—*Production of Leading Metals of Washington*

Metal	Amount, 1948	Value, 1948
Zinc	25,276,000 lb.	$3,361,708
Lead	14,294,000 lb.	2,558,626
Copper	11,330,000 lb.	2,458,610
Silver	375,831 oz.	340,146
Gold	70,075 oz.	2,452,625

Washington,

DISTRICT OF COLUMBIA, national capital of the U.S.A., covers the entire District of Columbia, which was originally 100 square miles until in 1846 congress ceded back to Virginia the area lying south of the Potomac river. During World War II and postwar years the population spread in increasing numbers into Maryland and Virginia. Many federal buildings, including the famous Pentagon, were located outside the District lines. The comprehensive plan of Washington, which was to be completed in 1950, treats the entire region. Legislation pending at the close of 1949, which had passed the senate, would enlarge the National Capital Park and Planning commission to include members appointed by the governors of Maryland and Virginia, and would bring all plans for public buildings and grounds before the commission at an early stage.

As a feature of the sesquicentennial, marking the 150th anniversary of the occupation of Washington as the seat of the national government, the American Institute of Architects and the American Planning and Civic association were to meet in Washington in May 1950, with the Joint Committee on the National Capital, composed of nine national professional and civic organizations co-operating. A planning exhibit of the comprehensive plan was to be shown by the National Capital Park and Planning commission.

During 1949 enough apartment buildings were completed or under construction to bring some relief to the housing congestion in 1950. The Pan American office building on Constitution avenue was completed in 1949. The White House had been dismantled and was being rebuilt.

The budget for the District of Columbia, year ending June 30, 1950, amounted to $110,000,000, of which about $15,000,000 was for city improvements. The budget for the year ending June 30, 1951, was estimated at $118,000,000, of which $20,000,000 would be for improvements. During 1949 a sales tax of 2% on many commodities went into effect. About $4,000,000 was collected in four months. The estimated total for 1950 was $14,000,000.

A bill was introduced into the 81st congress to provide for a constitutional amendment under which the residents of the District of Columbia would be permitted to vote for representation in congress, which, under the constitution is responsible for all legislation for the District of Columbia.

FILMS OF 1949.—*Cherry Blossoms in Washington; Washington, D.C.* (National Park Films); *Invitation to the Nation* (Byron, Inc).
(H. Js.)

Water Supply: *see* PUBLIC HEALTH ENGINEERING.

Wealth and Income, Distribution of.

A survey of consumer finances in the United States, published in 1949 by the board of governors of the federal reserve system, supplied information on the distribution of income in 1948 and liquid assets in early 1949. Three previous surveys had made similar information available for the period 1945–47. The surveys were based on small field canvasses of consumer spending units, defined as all persons living in the same dwelling and related by blood, marriage or adoption who pooled their incomes for their major items of expense.

Survey data on the percentage distribution of spending units according to size of holdings of liquid assets—U.S. government bonds, savings accounts and checking accounts—are provided in

Table I.—*Distribution of Spending Units by Size of Liquid Asset Holdings*

Amounts of liquid assets held*	(Per cent) 1946	1947	1948	1949
None	24%	24%	27%	29%
$1–$199	15	14	15	16
$200–$499	14	12	13	13
$500–$999	14	14	12	11
$1,000–$1,999	14	14	12	11
$2,000–$2,999	7	7	6	5
$3,000–$4,999	6	7	6	7
$5,000–$9,999	4	5	5	5
$10,000 and over	2	3	4	3
All units	100%	100%	100%	100%
Median holdings of all units	$400	$470	$350	$300
Median holdings of those with assets	$750	$890	$820	$790

*Includes all types of U.S. government bonds, checking accounts and savings accounts in banks, postal savings and shares in savings and loan associations and credit unions. Excludes currency holdings. Data for 1949 do not include shares in credit unions, but these are relatively small in the aggregate and not likely to affect totals significantly.

Source: Board of Governors of the Federal Reserve System.

Table II.—*Distribution of Spending Units and Money Income Received, by Income Groups*

Annual income (money income before taxes)	1945		1946		1947		1948	
	Spending units	Total money income	Spending units	Total money income	Spending units	Total money income	Spending units	Total money income
Under $1,000 .	20%	5%	17%	3%	14%	2%	12%	2%
$1,000–$1,999.	27	16	23	12	22	10	18	8
$2,000–$2,999.	23	23	25	21	23	17	23	16
$3,000–$3,999.	15	20	17	20	17	18	20	20
$4,000–$4,999.	7	12	8	13	10	13	12	14
$5,000–$7,499.	5	11	6	11	9	16	10	17
$7,500 and over	3	13	4	20	5	24	5	23
All units . . .	100%	100%	100%	100%	100%	100%	100%	100%

Source: Board of Governors of the Federal Reserve System.

Table I. The 1949 distribution did not differ substantially from the pattern of earlier postwar years. Over the 1946–49 period, however, there was an appreciable increase in the proportion of spending units having no liquid assets. About 14,500,000 spending units, or 29% of the total number in the United States, had no liquid assets in early 1949.

Table II summarizes data provided by the four consumer-finance surveys on the distributions of spending units and total money income according to size of income. These data reveal a significant upward movement in the income distribution since World War II. This was an extension of developments in evidence over the war period. The postwar expansion of total money income was accompanied by a shifting of many consumers to higher income levels. This shifting, it should be emphasized, pervaded the entire income distribution. The surveys found that when the nation's spending units were ranked into tenths by size of income there were only slight changes from 1945 to 1948 in the proportionate share of total money income received by each tenth.

A longer-term comparison of changes in the distribution of income is afforded by Table III. This shows for two prewar years and full-employment year 1948 the percentage of money income going to each fifth of the total number of families and single persons, ranging from those with the lowest incomes to those with the highest.

It is evident that from 1935–36 to 1948 there was a redistribution of income in the United States away from the highest income bracket. The second, third and fourth income brackets significantly improved their relative positions, whereas the percentage of total money income received by the highest bracket declined from 53 to 47.

State Distribution of Income.—Income payments were of record dollar volume in nearly every state in 1948, the latest year for which official (department of commerce) data on the geographic distribution of income were available in 1949. On a nation-wide basis, incomes received by individuals increased 9% from 1947 to 1948, reaching the total of $206,000,000,000. (See Table IV.) The largest regional gain was scored by the central states, where the flow of income expanded 12%. The smallest relative increase, 6%, occurred in New England and the far west. In every state of these two regions the rate of income rise was less than that for the country as a whole.

Comparison of the income data for 1948 with those for 1929 affords a measure of long-term trends in the geographic distribution of income. Such a comparison reveals a pronounced relative shift of total income from the New England and middle eastern regions to the south and west. From 1929 to 1948, as shown in Table IV, the increases in income in the far west, southeast, southwest and northwest were substantially larger than the nation-wide rise of 149%. The combined rate of increase for these four regions of the south and west, 216%, was about twice as large as the 105% increase in individual incomes recorded for the middle east and New England. It should be noted, however, that despite their long-term relative income declines, New England and the middle east still received more than one-third of the nation's income payments in 1948.

Table III.—*Percentage of Money Received by Each Fifth of Families and Single Persons*

Families and single persons ranked from lowest to highest income	1935–36	1941	1948
Lowest fifth	4.0%	3.5%	4.2%
Second fifth	8.7	9.1	10.5
Third fifth	13.6	15.3	16.1
Fourth fifth	20.5	22.5	22.3
Highest fifth	53.2	49.6	46.9
All groups	100.0%	100.0%	100.0%

Source: Council of Economic Advisers, based on survey data from National Resource Planning Board (1935–36), Department of Labor (1941) and Bureau of the Census, Department of Commerce (1948).

For the country as a whole, per capita income payments (total income divided by total population) were $1,410 in 1948, an increase of 7% over the 1947 average of $1,319. On a regional basis, relative increases in per capita income were largest in the central states (11%) and the middle east (8%). In the far west, on the other hand, average incomes were no higher in 1948 than in the preceding year. The population of this region rose 6% from 1947 to 1948, as compared with the 2% increase nationally.

Average-income levels in 1948 were highest in the middle east and far west. Per capita income payments were estimated at

Table IV.—*Income Payments to Individuals, by States and Regions*

State and region	Total income payments						Per capita income, 1948	
	Amount (In millions of dollars)				Per cent increase			
	1929	1946	1947	1948	1947 to 1948	1929 to 1948	Amount (dollars)	Per cent national average
Continental United States. . . .	$82,617	171,548	189,212	206 011	9	149	1,410	100
New England. . .	6,792	11,876	12,943	13 742	6	102	1,501	106
Connecticut. . .	1,459	2,814	3,193	3 381	6	132	1,700	121
Maine.	449	924	1,018	1,094	7	144	1,219	86
Massachusetts .	3,787	6,214	6,586	6,997	6	85	1,509	107
New Hampshire.	302	550	617	659	7	118	1,261	89
Rhode Island . .	579	998	1,111	1,165	5	101	1,564	111
Vermont. . . .	216	376	418	446	7	106	1,229	87
Middle East . . .	27,840	48,677	53,032	57,374	8	106	1,647	117
Delaware . . .	218	435	472	522	11	139	1,741	123
District of Columbia	638	1,739	1,804	1,885	4	195	1,691	120
Maryland . . .	1,106	2,746	2,911	3,116	7	182	1,546	110
New Jersey . .	3,268	6,219	6 665	7,181	8	120	1,605	114
New York . . .	14,479	23,223	25,211	27,378	9	89	1,891	134
Pennsylvania . .	7,338	12,656	14,009	15,126	8	106	1,444	102
West Virginia .	793	1,659	1,960	2,166	11	173	1,133	80
Southeast	8,681	23,930	26,205	28,498	9	228	957	68
Alabama . . .	802	2,117	2,392	2,585	8	222	891	63
Arkansas . . .	562	1,361	1,437	1,672	16	198	863	61
Florida	695	2,518	2,655	2,762	4	297	1,137	81
Georgia. . . .	956	2,621	2,904	3,076	6	222	971	69
Kentucky . . .	964	2,171	2,356	2,596	10	169	909	64
Louisiana . . .	862	2,066	2,315	2,597	12	201	1,002	71
Mississippi . . .	544	1,217	1,428	1,603	12	195	758	54
North Carolina .	966	3,037	3,314	3,531	7	266	930	66
South Carolina .	438	1,420	1,539	1,714	11	291	865	61
Tennessee . . .	905	2,565	2,815	3,036	8	235	955	68
Virginia	987	2,837	3,050	3,326	9	237	1,159	82
Southwest	4,153	10,124	11,769	12,615	7	204	1,153	82
Arizona	245	644	731	823	13	236	1,168	83
New Mexico . .	161	491	574	643	12	299	1,125	80
Oklahoma . . .	1,079	1,929	2,191	2,361	8	119	1,029	73
Texas.	2,668	7,060	8,273	8,788	6	229	1,192	85
Central	24,226	48,094	53,360	59,926	12	147	1,534	109
Illinois.	7,036	12,153	13,449	15,167	13	116	1,817	129
Indiana	1,877	4,342	4,886	5,494	12	193	1,403	100
Iowa	1,348	2,988	2,934	3,895	33	189	1,491	106
Michigan . . .	3,543	7,481	8,646	9,223	7	160	1,484	105
Minnesota . . .	1,443	3,173	3,508	3,970	13	175	1,353	96
Missouri	2,210	4,382	4,643	5,278	14	139	1,356	96
Ohio	4,920	9,742	10,945	12,136	11	147	1,548	110
Wisconsin . . .	1,849	3,833	4,349	4,763	10	158	1,443	102
Northwest	3,927	8,498	10,059	10,770	7	174	1,413	100
Colorado . . .	633	1,393	1,656	1,713	3	171	1,429	101
Idaho	230	610	685	734	7	219	1,252	89
Kansas	997	2,001	2,473	2,446	–1	145	1,291	92
Montana . . .	325	674	818	915	12	182	1,791	127
Nebraska . . .	764	1,488	1,583	1,890	19	147	1,473	104
North Dakota. .	264	624	895	858	–4	225	1,473	104
South Dakota. .	288	679	790	963	22	234	1,577	112
Utah	272	695	773	825	7	203	1,231	87
Wyoming . . .	154	334	386	426	10	177	1,494	106
Far West	6,998	20,349	21,844	23,086	6	230	1,579	112
California . . .	5,217	15,184	16,256	17,099	5	228	1,651	117
Nevada . . .	74	237	259	275	6	272	1,679	119
Oregon	603	1,777	1,984	2,134	8	254	1,302	92
Washington . .	1,104	3,151	3,345	3,578	7	224	1,453	103

Source: United States Department of Commerce.

Table V.—*Distribution of Incomes in the United Kingdom, 1947*

Range of incomes (in £)	Number of incomes (In thousands)	Amount of income before tax (in £ million)	Amount of income after income tax and surtax (in £ million)
Under 250	(13,000)	2,480	2,447
250– 500	7,900	2,690	2,470
500– 1,000	1,850	1,224	992
1,000– 2,000	485	654	464
2,000–10,000	165	597	320
10,000 and over	10	184	43
TOTAL	(23,500)	7,829	6,736
Unallocated private income		1,743	1,207
	Total	9,572	7,943

Note.—Unallocated private income includes the undistributed profits of companies, company taxation and any other income which cannot be allocated to individuals. Figures may not add to total shown, because of rounding.

Source: *National Income and Expenditure of the United Kingdom, 1946-48* (H.M.S.O. Cmd. 7649). Figures in parentheses are private estimates.

$1,647 for the middle east, 17% above the national average. The far west's average of $1,579 was 12% higher than that for the country as a whole. Per capita incomes were lowest in the southeast and southwest, where all 15 states, along with West Virginia, were grouped at the bottom of the per capita income array. The composite per capita income of the southern states in 1948 was nearly two-fifths below the average for all states outside the south. (*See* also INCOME AND PRODUCT, U.S.)

(C. F. Sz.)

Great Britain.—The distribution of incomes in the United Kingdom for 1947 was given in the White Paper on national income. The official estimates had to be supplemented by an estimate for the number of incomes in the lowest group which could be made with reference to the estimated total number of income recipients; the distribution still suffered from the defect of not giving sufficient detail for the lowest and largest group. The general tendency, in comparison with 1946, was a shift from lower to higher income groups without changing the number of incomes over £1,000. The distribution of incomes after income tax and surtax, also given, was much more even, to about the same degree as in previous years; it must be remembered that indirect taxes, for which no allowance was made, were of a repressive nature. (*See* Table V.) (*See* also BUDGET, NATIONAL.)

(T. BAR.)

Weather: *see* METEOROLOGY.

Weizmann, Chaim

(1874–), provisional president of the state of Israel, was born Nov. 27 in Motol near Pinsk in the then Russian part of Poland. After studies at Berlin and Fribourg universities, he became lecturer in chemistry at Geneva university and later, reader in biochemistry at Manchester university, England. In 1916–19 he was director of the British Admiralty laboratories. He was instrumental in securing from the British government the Balfour declaration of Nov. 2, 1917, which promised to favour the establishment in Palestine of a national home for the Jewish people. He was president of the World Zionist organization (1920–31) and of the Jewish Agency for Palestine (1929–31 and 1935–46).

On May 17, 1948, he announced in New York that he had accepted an invitation from the Israeli provisional government to serve as first president of Israel, and on Oct. 1 he took the oath to the state of Israel. Opening on Feb. 14, 1949, in Jerusalem, the first constituent assembly (*knesset hagdola*) of Israel, he emphasized that the new state was being built on solid foundations of freedom, equality, collective responsibility and national self-discipline. On Feb. 16 he was formally elected president of the republic. In the spring he visited the United States, where on April 23 in a speech at New York he pledged his country to accept the fullest international safeguard for the immunity and protection of the holy places in Jerusalem. He also visited Washington and was received by Pres. Harry S. Truman.

West Africa, British: *see* BRITISH WEST AFRICA.

Western European Union: *see* EUROPEAN UNION.

Western Samoa: *see* NEW ZEALAND, DOMINION OF; TRUST TERRITORIES.

West Indies, British: *see* BAHAMAS; BARBADOS; JAMAICA; LEEWARD ISLANDS; TRINIDAD AND TOBAGO; WINDWARD ISLANDS.

West Virginia.

The 35th state in the Union, West Virginia was conditionally admitted on Dec. 31, 1862, and proclaimed a separate state on April 20, 1863, effective 60 days later. It has an area of 24,282 sq.mi., of which 148 sq.mi. are water surface. Pop. (1940 census) 1,901,974, of whom 534,292 were urban. The U.S. bureau of the census estimated the population at 1,941,000 as of July 1, 1949, a 2.1% increase since 1940. Charleston (pop. 67,914) is the capital. Other cities in the order of their size are Huntington (78,836), Wheeling (61,099), Clarksburg (30,579), Parkersburg (30,103), Fairmont (23,105) and Bluefield (20,641).

History.—In 1949, the state legislature, composed of 20 Democrat and 12 Republican senators and 78 Democrat and 16 Republican delegates, completed a 60-day session within the constitutional limit and referred three constitutional amendments: one to relax the provision covering bond issues for school buildings, one for a $90,000,000 bonus for veterans of World War I and World War II, and the third authorizing increases in the pay of the members of the state legislature.

The state officers in 1949, all Democrats, were: governor, Okey L. Patteson; secretary of state, D. Pitt O'Brien; treasurer, R. E. Talbott; auditor, Edgar B. Sims; attorney general, Ira J. Partlow; commissioner of agriculture, J. Blaine McLaughlin; and state superintendent of free schools, W. W. Trent. The attorney general resigned, effective Dec. 1, 1949, and was succeeded by William C. Marland. The state treasurer died Dec. 17 and was succeeded on Dec. 19 by William H. Ansel, Jr.

Education.—In 1948–49 the total net enrolment of the 4,146 elementary schools was 296,644. For the 354 high schools (junior and senior) it was 132,717. There were 10,292 elementary and 5,391 secondary teachers. The total state support for free public schools was $35,543,778, of which $35,362,898 was state aid to schools, $45,000 for homebound, crippled children, $125,000 textbook aid and $10,880 aid to children's homes. The total net revenue collected for 1948–49 was $83,850,874. There were nine institutions of higher learning under control of the state board of education, which had a total enrolment in the first semester of 1948–49 of 8,458, of whom 3,527 were veterans, and a total teaching staff of 482.

Social Insurance and Assistance, Public Welfare and Related Programs.—For the year ending June 30, 1949, the total expenditure for old-age assistance was $6.090,835.24, for the blind $273,659.24, and for dependent children $6,231,812. Including the cost of administration, the total cost of public assistance was $12,596,306.92. With state, county and federal funds totalling $1,420,000, $1,009,492.43, and $243,858.20, respectively, and a balance of $293,232.18 from the preceding year, $2,966,582.81 was spent for general relief, of which $1.263,444.57 was direct relief, $620,091.33 general medical-hospitalization, $13,395.26 correction of vision and prevention of blindness (direct aid), $380,239.15 crippled children (direct aid) and $627,157.18 for administration and services.

Communication and Transportation.—The most important developments were in air transportation. The Kanawha county airport was in process of development at an estimated cost of $7,000,000; commercial airports were in process of construction at Beckley and Huntington; an executive-appointed aeronautics commission was studying aviation with special reference to the needs of the state; and there were approximately 44 daily flights serving the capital city. The year witnessed the exit of the last electric street car, and the mileage of steam railways tended to be stationary at a total of about 7,500, including double tracks and sidings. There were 33,328 mi. of improved state roads, of which 28,411 were secondary. On Nov. 1, 1949, there were 341,739 telephones.

Banking and Finance.—On June 30, 1949, deposits in the 105 state banks and trust companies totalled $438,140,787.25 and those of the 74 national banks, $534,782,000. Resources of 21 federal savings and loan associations were $40,482,333.44; of 16 state building and loan associations, $12,925,349.31; and of 26 industrial loan companies, $17,880,356.05. Total loans of 105 small loan businesses were $17,089,132.21, and 25 state chartered credit unions had total resources of $702,398.18.

State receipts for 1948–49 totalled $233,056,876.73, and the disbursements were $227,388,517.73. As of June 30, 1949, there was a cash balance of $49,503,232.44. The unencumbered balance in the state fund, general revenue, at that time, was $40,183,065.09. The state net indebtedness was $56,372,216.92.

Agriculture.—The total cash income from farm products and livestock in 1948 was $129,592,000, of which $102,019,000 was for livestock and livestock products sold or traded. Government receipts were $1,946,000, and goods consumed on farms had an estimated value of $65,335,000, making a total farm income of $196,873,000, or about $4,000,000 more than for 1947. The average farm income was about $2,000 or about 125% more than the average for the prewar years, 1932–1941.

Principal Agricultural Products of West Virginia

Crop	1949	1948	Average, 1938-47
Corn, bu.	11,748,000	$13,068,000	11,772,000
Wheat, bu.	1,502,000	1,658,000	1,624,000
Oats, bu.	1,606,000	1,740,000	1,772,000
Buckwheat, bu.	95,000	114,000	203,000
Hay (all), tons	1,024,000	1,052,000	937,000
Apples (commercial), bu.	3,720,000	2,750,000	3,946,000
Potatoes (Irish), bu.	2,000,000	2,090,000	3,062,000
Barley, bu.	420,000	330,000	248,000
Tobacco lb.	4,620,000	3,988,000	2,853,000

Industry.—In 1948–49 industry and business employed 517,461 persons, not including 82,500 in agriculture, 36,000 in professional services, 22,000 in domestic service and 7,800 in finance, insurance and real estate. Those employed in industry and business earned $1,489,163,000 or $148,748,000 more than in the previous year. In the order of the largest number of persons employed the largest industrial groups, together with the total wage of each for 1948–49 were: coal mining and coke making 122,048—$505,201,000; commercial, wholesale and retail 93,132—$183,939,000; iron, steel and metals 40,702—$134,081,000; transportation 24,880—$68,706,000; chemicals and allied products 22,098—$81,848,000; glass and glass manufacturing 20,280—$55,081,000; public agencies, buildings and institutions 19,089—$35,711,000; building, erection and repairs 18,138—$52,117,000; automobiles and trucks 17,847—$45,864,000; lumber and wood products 16,340—$29,713,000; personal services, not professional or domestic 15,745—$27,028,000; clay, stone, sand, etc. 14,355—$37,801,000; clothing and textiles 13,846—$32,064,000; construction and building 11,992—$31,426,000; food and beverage products and manufacturing 11,803—$21,055,000; oil and gas 10,482—$25,222,000; and trucking, express and storage 10,442—$28,694,000.

Mineral Production.—The total production of crude oil in 1948 was 2,687,000 bbl.; the natural gas production was 221,130,000,000 cu.ft.; coal production was 168,589,000 short tons; and coke (beehive), 222,614 tons. The volume of gas imported by pipe line from the southwest for redistribution to the east exceeded the volume produced within the state for exportation and consumption.

FILMS OF 1949.—*Coal Country* (Flory Films, Inc.). (C. H. A.)

Whaling: *see* FISHERIES.

Wheat. The U.S. wheat crop of 1949, which amounted to 1,146,463,000 bu., was the sixth consecutive crop of more than 1,000,000,000 bu. Nevertheless, it was a disappointment in that, from a record planted acreage of 84,931,000, about 6,000,000 ac. more than for 1948, the harvest was 13% less than the 1,313,534,000 bu. of 1948. The 76,751,000 ac. harvested gave a yield of only 14.9 bu. per acre, compared with 18 bu. per acre (on 73,017,000 harvested acres) in 1948, and an average yield for 1938–47 of 16.6 bu. Kansas, North Dakota and Texas were the leading producers (*see* Table I).

The 1949 winter wheat crop of 901,668,000 bu. was the third largest on record, exceeded by the 1,007,863,000 bu. of 1948, and the record 1,068,048,000 bu. in 1947. A record of 62,372,000 ac. were seeded in the fall of 1948, of the acreage seeded a record 55,453,000 ac. were harvested. Yields averaged only 16.3 bu., well below the 18.8 bu. of 1948 and an average for 1938–47 of 17 bu.

Spring wheat production, mostly in the northern Great Plains, was estimated at 244,795,000 bu., 20% less than the 305,671,000 bu. of 1948, and 8% below the average of the previous decade. The 21,298,000 harvested acres, the largest since 1932, represented a 9% increase over 1948, and 23% larger than for the decade. Yields were cut sharply by drought and accompanying hazards to an average of 11.5 bu. per acre, compared with 15.7 bu. in 1948, and 15.4 bu. average for 1938–47. Of the total spring wheat, 38,864,000 bu. were of the durum type. Yields averaged 11 bu. per acre, compared with 14 bu. in 1948.

In regard to classes of wheat, the notable gain for 1949 was in soft red wheat, which is mostly produced in the eastern part of the winter wheat belt. A crop of 259,709,000 bu. was produced, as compared with 257,613,000 bu. in 1948 and only 195,588,000 bu. average for the previous decade. But all other types decreased as compared with 1948; hard red winter wheat, for example, to 546,338,000 bu. from 637,765,000 bu. in 1948. As a consequence, elevators from Chicago, Ill., eastward were crowded and prices for the soft red type were depressed.

U.S. exports of wheat and flour (in wheat equivalent) attained an all-time record of 503,216,000 bu. in 1948–49, compared with 480,313,000 bu. in the previous year and less than 100,000,000 bu. prewar. Of that amount about 330,000,000 bu. went to Economic Cooperation administration participants, and another 100,000,000 bu. to the far east, largely Japan and India. Exports in the latter part of 1949 were at a lower rate; July to Oct. 1949 exports were 123,871,000 bu. against 202,104,000 bu. the previous year. Procurement for export, except to occupied countries, was turned back to private channels late in 1949.

The wheat situation at the end of 1949 in summary was: carry-over stocks of 305,773,000 bu. plus the 1949 harvest of 1,146,463,000 bu. provided a total supply of 1,452,236,000 bu. (against 1,484,106,000 bu. total supply the year before). Domestic requirements during 1949–50 were estimated at about 700,000,000 bu. (food 487,000,000; seed 83,000,000; feed 130,000,000). Thus, 752,000,000 bu. appeared to be available for export and carry-over. It was expected that year-end stocks on July 1, 1950, would be at least 350,000,000 bu. and might be nearer 400,000,000 bu. It appeared that practically all the mounting surplus would be held by the Commodity Credit corporation under price support operations.

Wheat prices to producers fluctuated below the loan level in 1949, breaking from $2.02 in January to $1.79 per bushel in August, then recovering. The season average price to producers for the 1949 crop was estimated at $1.86 per bushel (compared with $2.00 for the 1948 crop). The government loan averaged $1.95 per bushel at the farm on the 1949 crop.

The world wheat crop of 1949 was estimated at 6,185,000,000 bu., compared with 6,385,000,000 bu. in 1948 and a prewar average of slightly more than 6,000,000,000 bu. in 1935–39 (*see* Table II). Wheat production in Europe increased very slightly in 1949, compared with the previous year, and remained more than 100,000,000 bu. below the prewar level, a fact accounted for largely by 68,800,000 harvested acres in 1949, against 74,860,000 in 1935–39.

The wheat harvest of the Soviet Union was estimated as the best since the war, although still more than 10% below the prewar average. Production in Asia was lower than in 1948 and about the same as prewar, mostly because of a sharp decrease in China and Turkey. The crop of India and Pakistan was about 40,000,000 bu. larger than in 1948 and nearly up to prewar.

Preliminary forecasts on Argentina and Australia, based largely on acreage and weather, suggested an Argentinian crop

Table I.—*U.S. Wheat Production by Leading States*

(In thousands of bushels)

State	1949	1948	Average, 1938–47
Kansas	164,208	231,368	180,657
North Dakota	111,439	140,958	127,404
Texas	102,848	59,104	53,944
Oklahoma	88,725	98,962	67,428
Montana	64,080	93,718	64,160
Ohio	60,002	57,648	43,274
Washington	57,511	79,268	57,787
Nebraska	54,408	82,988	58,994
Colorado	49,551	64,605	27,703
Illinois	49,379	41,049	28,160
Indiana	39,532	38,162	27,271
Idaho	38,106	35,931	29,316
Missouri	35,028	39,270	21,680
Michigan	35,019	36,270	19,976
South Dakota	34,276	50,391	37,530
Oregon	23,203	29,954	21,187
Pennsylvania	21,114	18,354	18,461
Minnesota	20,058	18,447	24,066
New York	11,760	12,452	7,364
California	11,470	10,535	11,429

Table II.—*World Wheat Production for Selected Areas**

(In million bushels)

	1949	1948	1947	Average, 1935–39
United States	1,146	1,314	1,367	758
Canada	367	393	342	312
Mexico	17	18	16	14
Europe	1,465	1,455	1,005	1,595
Great Britain	80	88	62	62
North Africa	126	114	100	120
Union of South Africa	17	18	18	16
Asia	1,480	1,593	1,526	1,499
Argentina	210	191	245	222
Australia	190	190	220	170
U.S.S.R.	1,100	1,025	850	1,240
World Total	6,185	6,385	5,780	6,015

*Revised estimates by the U.S. department of agriculture on basis of incomplete reports from several countries with adjustments for year of harvest, and including allowance for missing data and forecasts for crops being harvested.

about 20,000,000 bu. larger than the previous year and an Australian outturn almost equivalent to the large one of 1948.

World exports of wheat in 1948–49 were about 908,000,000 bu., compared with 893,000,000 bu. in 1947–48. The prewar rate was about 560,000,000 bu. Exports were expected to decline to about 850,000,000 bu. in 1949–50.

The International Wheat agreement, in form slightly modified from that of 1948, was ratified by the U.S. senate as a treaty. Of 37 signatory countries, 32 had ratified late in the year. Import and export operations under the agreement began in August and its effectiveness was yet to be ascertained; by Dec. 15 the U.S. had exported about 28,000,000 bu. of 168,000,000 bu. guaranteed.

At the end of 1949 indications were that the planted acreage for the wheat crop to be harvested in the U.S. in 1950 would be approximately 15% less than in 1949 and near the goal recommended by the government. Winter wheat acreage for the 1950 harvest of 53,023,000, compared with 62,372,000 the previous year and at 16.7 bu. per acre, gave an indicated production of 884,658,000 bu. The general condition of the autumn sown portion of the new crop was good to excellent. (*See* also FLOUR; FOOD SUPPLY OF THE WORLD.) (J. K. R.)

Wholesale Trade: *see* BUSINESS REVIEW.

Wilderness Preservation.

The preservation of primeval and primitive areas for recreational, educational and scientific purposes and as monuments of the past became more firmly established as national policy in the United States in 1949 as conservationists realized success in significant steps, notably those directed toward preservation of the Minnesota and Ontario wilderness canoe country which is shared by the United States and Canada.

In 1948 the 80th congress, through public law 733 and a house of representatives committee report on this measure, had reaffirmed the purpose of preserving the primeval character of this region and had authorized an appropriation of $500,000 for purchasing privately held lands within the designated roadless areas of the Superior National forest. The committee report pointed out that within the past two or three years development of the cargo-carrying aeroplane, servicing resorts on privately owned lands within the wilderness reserves and transporting passengers to and from these resorts, had threatened the destruction of the wilderness and the wilderness values of the canoe recreation for which the areas had been established.

Pursuant to this public law 733, the 81st congress in 1949 made an initial appropriation of $75,000 for the fiscal year to end June 30, 1950, for the purchase of the privately owned lands and thus the removal of the resorts which were inconsistent with wilderness preservation.

On Dec. 17 Pres. Harry S. Truman in an executive order (no. 10,092) dealt with the aeroplane menace to this wilderness by establishing an airspace reservation barring all aeroplanes over the roadless areas below an altitude of 4,000 ft. above sea level, except those making emergency landings, navigating when low-level flight is necessary for safety, conducting rescue operations or conducting or assisting in the conduct of official business of the United States, the state of Minnesota or of Cook, St. Louis or Lake counties, Minn. A further exception to avoid hardships postponed the effective date in certain instances, providing that "subject to general regulations of the Secretary of Agriculture, aircraft may be navigated within this airspace reservation until January 1, 1952, for the purpose of direct travel to and from underlying private lands; provided that air travel was a customary means of ingress to and egress from such lands prior to the date of this order."

President Truman had thus for the first time invoked for the protection of wilderness the authority which the Air Commerce act of May 20, 1926, granted the president to establish such reservations for national defense and other governmental purposes. The action had been recommended by Secretary of Agriculture Charles F. Brannan and endorsed by the secretary of the interior, but the secretary of commerce, following recommendations by the Civil Aeronautics administration, had declined Secretary Brannan's request that he forward the recommendation to the president.

Urging establishment of the aeroplane control were the Izaak Walton League of America, The Wilderness society and other civic and conservation organizations, co-operating particularly with the president's Quetico-Superior committee, of 919 North Michigan avenue, Chicago 11, Ill., a special five-man committee first appointed by Pres. Franklin D. Roosevelt and reappointed with enlarged authority by President Truman on Sept. 6, 1947.

Wilderness preservation—thus endorsed by the congress and the president in a test case which had been the subject of controversy—was also the subject of an extensive study by the legislative reference service of the Library of Congress made at the request of the chairman of the subcommittee on fisheries and wildlife conservation of the house of representatives' committee on merchant marine and fisheries. Published in September as Committee Print No. 19, entitled *The Preservation of Wilderness Areas: An Analysis of Opinion on the Problem,* by C. Frank Keyser, regional economist of the legislative reference service, the resulting 114-p. report included a 39-p. annotated list of "Wilderness Areas in the United States" and a 10-p. list of additional suggested areas. Outstanding federal areas were the primeval national parks, certain wildlife refuges, roadless areas of Indian reservations and 77 specially designated wilderness, wild, primitive and roadless areas within the national forests. Commenting on the report, *The Living Wilderness* said editorially: "Never before have so many responsible officials considered so pointedly the needs for wilderness and the problems in its preservation. Never before has so much of the data needed by those concerned with the development of an American policy for wilderness preservation been assembled and made so conveniently available." Included in the study were reports from five federal agencies, 72 replies from 105 questionnaires to various organizations and 112 responses from 209 inquiries addressed to state officials. The report concluded that "a survey of the public lands of the nation, and some private lands as well, should be made with a view to determining two facts: (1) Whether the present dedicated wilderness areas meet all the qualifications and whether they are too large or too small and (2) for the purpose of locating additional areas capable of meeting those qualifications. This," it was suggested, "may be done at the direction of Congress, possibly by a joint resolution or concurrent resolution authorizing the survey." Great significance was attached to this study by conservationists and steps were under way at the close of the year to carry out its recommendations. (*See* also FORESTS; NATIONAL PARKS AND MONUMENTS; UNITED STATES; WILDLIFE CONSERVATION.)

Federal sources of information were the department of agriculture's forest service and the department of the interior's fish and wildlife service, office of Indian affairs and national park service, addresses for all of these being Washington 25, D.C. The Wilderness society, 1840 Mintwood Pl., N.W., Washington 25, D.C., published *The Living Wilderness* quarterly. (H. Z.)

Wildlife Conservation.

The convention of the International Technical Conference on Protection of Nature at Lake Success, N.Y., Aug. 22 to 27, 1949, was an outstanding event of the year in wildlife conservation. Held concurrently with the United Nations Scientific Conference on the Conservation and Utilization of Resources, it recommended establishment of an international survival service for information purposes, proposed the maintenance of an open list of rare and threatened animal species, and called attention to a partial list which included 13 birds and 14 mammals. Sponsored jointly by the United Nations Educational, Scientific, and Cultural organization and the International Union for the Protection of Nature, this conference emphasized the interrelations of human welfare and wildlife conservation and sought to promote United Nations studies of ecological areas to increase knowledge of human ecology.

In March the 14th North American Wildlife conference brought to Washington, D.C., a record attendance of 1,147 from 47 states, Alaska, the District of Columbia, Canada, Mexico and Argentina. The transactions, published by the Wildlife Management institute, sponsor of the conference, comprised some 65 papers, most of which were reports of studies and investigations and constituted an outstanding symposium on the status of wildlife in North America.

In June the fish and wildlife service of the U.S. department of the interior reported a compilation of state estimates of big-game numbers for 1947—latest available at that date—including inventories on national forests, parks and refuges. It showed a total of 7,758,000 in the United States and reported a total of 891,200 taken by hunters.

A special report on *The Moose and Its Ecology* issued in Dec. 1949 by N. W. Hosley of the service estimated that there were approximately 19,000 of these animals in eight or nine northern states—as compared with an estimated 12,000 in 1944 and 17,900 in 1947. Alaskan estimates showed approximately 30,000, while it was speculated from United States and Alaskan densities and from Canadian conditions that moose in Canada might number about 146,000.

Upland game birds were discussed in a session of the North American Wildlife conference. The wild turkey was reported as in generally poor shape west of the Mississippi and only slightly better in a few eastern states. The bobwhite quail was reported steadily decreasing in all the states where it is important as a game species. In a majority of 26 states studied, pheasant populations had partially recovered.

Intensive investigations of waterfowl were continued by the fish and wildlife service. A wintering grounds inventory Jan. 11 to 14 indicated a 12% increase in duck numbers over the preceding year, a 32% increase in geese, a 39% increase in brant and a 20% increase in swans. A 56% decrease in coot numbers, however, resulted in a 1% decrease in total waterfowl. Numerical totals were not reported. Drought conditions later in the year adversely affected important sections of the breeding grounds in the short grass prairie regions of Saskatchewan and Alberta and made the 1949 increase not as large as was expected. Nevertheless, it was such as to lead to a ten-day lengthening of waterfowl shooting seasons.

Hunting licences sold in the United States increased to a new high in the year ended June 30, 1949, totalling 12,758,698, as compared with 11,391,810 in 1947–48. Total fees paid increased from $29,814,327 in 1948 to $34,966,687 in 1949. Michigan led in the number of licences sold in the 1949 year, with 977,879. Pennsylvania was next with 878,669, followed by New York with 847,314 and Ohio with 718,292.

Sales of federal migratory bird hunting stamps also increased to a new high record of 2,127,598 for the year ended June 30, 1949. The 81st congress increased the price to $2 and also provided that not to exceed 25% of any refuge area acquired with

HERD OF ELK seen from a U.S. air force C-47 plane which had just dropped bales of hay for them in the deep snow near Denver, Colo., in Feb. 1949. The feeding project was carried out by the Colorado game and fish department to keep the elk from foraging on ranchers' haystacks funds under the new law might be administered for public hunting in the discretion of the fish and wildlife service.

Under the federal aid program for wildlife restoration projects in the states, an appropriation of $11,276,687 from excise taxes on arms and ammunition was made available during the 1949 fiscal year—largest ever made—and a record number of projects (612) were approved for the 48 states, Alaska, Hawaii, Puerto Rico and the Virgin Islands.

Significant progress was made by the fish and wildlife service's office of river basin studies in surveying the biological aspects of proposed flood control, irrigation, hydroelectric and other development projects, 231 such projects having been reported on during the year. (*See* also NATIONAL PARKS AND MONUMENTS.)

(H. Z.)

Canada.—The dominion wildlife service reported that 30% of the wild ducks examined by fluoroscope carried shotgun pellets. Fearing that use of aircraft would reduce sportsmen to hunting rabbits and squirrels, it recommended that pilots be made honorary enforcement officers, that large game areas be closed to air-transported sportsmen, that provincial game wardens be supplied with aircraft for patrol purposes. Parliament increased the service's funds for 1949–50 to $259,520.

Ducks Unlimited allocated $325,000 for improvement of duck breeding grounds in western Canada. Antipollution activity was aided by the Canadian discovery that magnesium-based sulphite was better than calcium-based sulphite because the former could be almost completely recovered after the digestion of pulp and used again whereas the latter had to be dumped into streams as waste.

The Northwest Territories council decreed that all trap lines should be registered as a conservation measure. The beluga, a milky-coloured sea mammal of Hudson bay, was brought under protection by the federal government, and only Indians, Eskimo and royal Canadian mounted police could kill them without licence. The federally-controlled arctic reindeer became so numerous that ear-tagging was planned to maintain control.

BIBLIOGRAPHY.—Dept. of Mines and Resources, *The Protection of Migratory Birds*, a consolidation of legislation and regulations (1949).

(C. Cy.)

Other Countries.—In British Africa informal conferences between game departments were held and scientific research into such problems as game-borne diseases continued. Where the policy of national parks had been accepted delay in giving it effect was still caused by difficulties over boundaries and native reserves. In India the existing legislation for the protection of nature was undergoing revision. In Great Britain the Nature conservancy was founded by royal charter to advise the government on establishing nature reserves and to carry out necessary researches in connection with them. The National Parks and Access to the Countryside bill proposed to confer upon the Nature conservancy considerable powers to acquire land for the creation of nature reserves.

FILMS OF 1949.—*A Heritage We Guard; Realm of the Wild; Vanishing Herds* (Castle Films); *Marsh Marauders; Trout Factory* (Hawley-Lord).

(H. G. M.)

Windward Islands.

The British Windward Islands (in the Caribbean sea) comprise the four islands of Dominica, St. Lucia, St. Vincent and Grenada—each ranking as a separate colony for internal administration—together with the Grenadines, which lie between St. Vincent and Grenada and are associated partly with the one and partly with the other.

Windward Islands

	Dominica	Grenada	St. Lucia	St. Vincent
Revenue	B.W.I. $1,222,499*	B.W.I. $2,255,334*	B.W.I. $1,933,891*	B.W.I. $1,788,655*
Expenditure	B.W.I. $1,318,319*	B.W.I. $3,498,828*	B.W.I. $1,951,148*	B.W.I. $1,753,127*
Imports	£475,559†	£1,293,433†	B.W.I. $4,117,853‡	£692,967†
Exports	£200 423†	£995,730†	B.W.I. $1,116,832‡	£234,647†

*1949 est. †1947. ‡1948 provisional.

Total area: 821 sq.mi. Total pop. (1948 est.): 256,000. Governor: R. D. H. Arundell.

History.—It was announced in April 1949 that the secretary of state for the colonies had agreed to certain constitutional changes including the introduction of adult suffrage (subject to a single literacy test only) at the next elections for the legislative councils and the removal of the property qualification for a candidate, subject to further examination of the existing arrangements for deposits which candidates were required to make.

The rebuilding of Castries, capital of St. Lucia, which was wiped out by fire in June 1948, was entrusted to the Colonial Development corporation and work began in April. A town plan was published. Public funds were made available to the government of St. Lucia to the amount of £700,000 in addition to bank loans for the financing of private building.

In Dominica it was announced that the secretary of state had approved additional assistance for development of B.W.I. $2,160,000 (of which B.W.I. $1,248,000 was expected to be a free grant and B.W.I $912,000 a loan) over and above the original Colonial Development and Welfare grant of B.W.I. $1,627,000, and that the Colonial Development corporation had completed plans for the establishment of a group project involving investment of more than B.W.I. $960,000.

Finance and Trade.—Currency (from 1948): British West Indian dollar: value (Dec. 1949) = 58.33 cents U.S.

Principal exports: lime juice, cocoa, sugar, cotton, copra and arrowroot.

(Jo. A. Hn.)

Wines.

France once again was the largest producer of wine in 1949. Total production of famous growth (Appelation Controlée) wines amounted to 118,500,000 gal. against a total of 130,000,000 gal. in 1948. The famous growths of Burgundy and Rhône produced 16,900,000 gal. against 19,600,000 the previous year, the quality being almost equal to the great 1947 wines, and Bordeaux 59,000,000 gal. of excellent quality

World Production of Wine

(Millions of gallons)

Country	1949	1948	Average	1949 Quality
Algeria	381.9	334.0	500 (1930–39)	
Argentina	275.0	307.0	215	Excellent
Australia	41.4	41.0	20 Prewar	
Austria	22.0	25.1	29 (1935–39)	Very Good
Brazil	26.2	25.6	19 (1943–47)	
Bulgaria	67.5	39.6	48 (1935–39)	
Canada	3.6	4.8	4	Best in 75-yr. history
Chile	83.0	91.9	85 (1935 -39)	Good
Cyprus	4.1	5.4	4	
Czechoslovakia	7.9	8.9	11 (1935–39)	
Egypt	*	0.8		
France	1,053.7	1,127.9	1,457 (1930–40)	Excellent—almost like 1947
Germany	40.0	59.4	50	Excellent
Greece	118.8	98.4	99 (1935–39)	Good
Hungary	119.0	96.0	100	Above average
Israel	1.8	1.0	1.6 (1943–47)	Good average
Italy	975.0	939.4	935 (1936–46)	Fair
Lebanon	1.0	0.8		
Luxembourg	1.5	3.2		
Malta	1.3	1.3		
Mexico	*	6.8		
Morocco	12.9	11.0		
Peru	4.0	3.6		
Portugal	191.4	216.7	241 (1939–48)	Poor
Rumania	160.0	89.0		
South Africa	36.8	37.1	37.1 (1936–46)	
Spain	396.0	398.0	500	Some good
Switzerland	12.4	20.9	15 (1936–46)	Good
Syria	3.0	3.0		
Tunisia	21.9	21.2		No variation
Turkey	4.0	3.1		
Uruguay	20.0	17.2		
U.S.A.	100.0	140.6	102.5 (1940–45)	No variation
U.S.S.R.	273.0	264.0		No variation
Yugoslavia	127.5	108.8	150	
	4,587.6	4,552.5		

*Unknown.

Countries like the United States, marked "No variation" in the above table, produce uniform wines from year to year because of stable climatic conditions and methods of production used.

against the 1948 yield of 63,200,000. Champagne production was rather small but of high quality.

During 1949 prices dropped somewhat, because of importation into France of current wines from other countries. Algerian production was the highest in ten years.

In Spain, the Jerez district produced 6,600,000 gal. of sherry against 9,200,000 the previous year. This district had the least rain of the preceding 15 yr. Of the Portuguese wines, port wine, controlled to world demand, was held to 4,400,000 gal.

United States production was the smallest since 1945. About 90% of the production was from the state of California; 85% of the total were dessert and appetizer wines and the remaining 15% table and sparkling wines. About 8% of the total were first class premium wines. Actual consumption rose about 18%.

During 1949, the California wine industry established the Grape Stabilization Advisory board to control the overproduction of California wine. (J. We.)

Wisconsin.

One of the north-central states of the United States, Wisconsin, popularly called the "Badger state," entered the union as the 30th state in 1848. Area, 56,154 sq.mi. of which 1,439 sq.mi. are water. The population was estimated as of July 1, 1949, at 3,355,000, an increase of 217,000 over the federal census figures of 1940. The urban population in 1940 was 1,679,144 and the rural 1,458,443. Only 24,835 were nonwhite. Foreign-born whites numbered 288,774. Capital, Madison (pop. est. 1949, 85,000). Milwaukee is the largest city with an estimated population of 633,000. Other large cities are Racine (75,000), Kenosha (55,500), Green Bay (50,000) and La Crosse (50,000).

History.—The major accomplishments of the 1949 session of the legislature lay in the fields of education and public welfare. By recapturing $11,000,000 in unobligated building appropriations and adding another $14,000,000, it established a $25,000,000 fund for welfare and educational buildings. More than half this total was for mental institutions. Beds were provided for an additional 1,400 mental patients, an extra $1,000,000 was allocated for the hiring of additional doctors and staff, and the state welfare board and department were reorganized. A proposed consolidation under a single board of the higher educational facilities of the state was defeated, but school aids were raised to $33,500,000, the school transportation aid was increased by $2,500,000, the compulsory school attendance age was raised from 14 to 16, and a proposed constitutional amendment increasing the municipal debt limit for school purposes was passed.

To finance the building program and educational aids, a 25% surtax was added to the state income tax, and the state tax on cigarettes was increased one cent a pack.

The legislature also established a long-range building program under a state building commission with its own appropriation for preliminary plans and surveys and the allocation of priorities; appropriated $16,000,000 for veterans' housing; defeated a veterans' bonus bill; re-established a state maximum speed law of 65 m.p.h. by day, 55 by night; defeated a large number of anti-Communist restrictions; rejected a pension system for judges; barred segregation in the national guard; purchased a new executive mansion.

State officers: Oscar Rennebohm (Rep.), governor; George Smith (Rep.), lieutenant governor; Fred R. Zimmerman (Rep.), secretary of state; Warren R. Smith (Rep.), state treasurer; Thomas E. Fairchild (Dem.), attorney general; George Watson, superintendent of public instruction (succeeding John Callahan, July 5, 1949).

Marvin B. Rosenberry retired as chief justice of the state supreme court at the close of the year, and was succeeded by the senior justice in terms of service, Oscar M. Fritz.

Education.—There were approximately 6,000 elementary and 455 secondary schools, 25 county normal schools and 9 teachers colleges in 1948–49. Enrolment in the elementary schools totalled 348,903; in secondary schools it was 141,892; and in county normal schools 826. Elementary schools employed 13,944 teachers, while secondary schools had 6,568 and the county normal schools had 103. The teachers colleges had 555 faculty members teaching 8,868 college and 2,254 training school students. State aid for education in the fiscal year 1947–48 amounted to $14,554,807. Total expenditures in all elementary and secondary public schools were $91,193,022.

Social Insurance and Assistance, Public Welfare and Related Programs.—The number of cases receiving public assistance as of June 30, 1949, was as follows: general relief 7,344; old age assistance 49,316; aid to the blind 1,334; aid to the totally and permanently disabled 620; dependent children in their own or a relative's home 8,308; dependent children in foster homes 1,286—a total of 59,899 households. Expenditures for public assistance in the year ending June 30, 1949, were: general relief $3,886,033; old age assistance $19,974,061; aid to the blind $731,084; aid to the totally and permanently disabled $407,263; dependent children in their own or a relative's home $9,346,267; dependent children in foster homes $550,888—making a grand total of $34,895,696. Civilian unemployment benefit payments during the calendar year 1948 were $4,895,635 as against $3,389,620 in 1947 and $7,771,329 in 1946. The contributions for 1948 totalled $10,788,433 as compared with $16,292,966 in 1947 and $7,590,280 for 1946.

Wisconsin's 13 charitable, mental and correctional institutions during the year ending June 30, 1948, were operated at a cost of $8,227,092. The average daily population for June 1949 was 9,406.

Communications.—Public highways as of Jan. 1, 1949, totalled 94,028 mi. divided as follows: 85,357 (towns), 2,465 (villages), and 6,206 (cities). Expenditures by the Highway commission for the fiscal year of 1948–49 were $71,869,545. The total railway mileage (steam and electric) as of Dec. 31, 1948, was 6,658.06 with 52.69 mi. of trolley coach route (trackless). There were 896,262 telephones, and on Dec. 15, 1949, there were 168 airports and 10 seaplane bases.

Banking and Finance.—At the end of 1948 there were 95 national banks and 460 state banks (a decrease of 1). National banks had deposits of $1,396,538,000 and assets of $1,488,791,000. Deposits in state banks totalled $1,561,620,145, and the assets were $1,662,931,367. The 542 credit unions (11 more than in 1947) listed assets of $30,347,672. Assets of the 113 savings and loan associations totalled $201,339,274, an increase of more than $20,000,000.

State receipts for the fiscal year ending June 30, 1949, were $187,889,843; disbursements $177,004,191. Taxes collected by the state and returned to local subdivisions totalled $53,821,045; agency collections returned to counties were $1,339,331; state aids amounted to $51,547,232.

Agriculture.—Total acreage harvested in 1948 was 10,270,000. Cash receipts were $1,150,524 consisting of $148,057 from crops and $1,002,467 from livestock and its products, including milk. Wisconsin had a good crop year; corn set a new production record, and hay production was larger than in 1947. Feed grain crops were slightly smaller. Fruit crops varied. All important canning crops showed above average production. For the first time in a decade, farm wages declined slightly because of a larger labour supply, increased use of farm machinery and a lower level of farm income.

Table I.—*Leading Agricultural Products of Wisconsin*

	1949	1948	Average, 1938-47
Corn (bu.)	129,800,000	113,252,000	101,106,000
Oats (bu.)	119,884,000	126,148,000	103,365,000
Canning peas (lb.)	234,260,000	168,260,000	—
All tame hay (tons)	6,288,000	5,458,000	6,946,000
All clover and timothy (tons)	2,280,000	3,041,000	4,061,000
Alfalfa (tame)	3,554,000	2,039,000	2,286,000

Manufacturing.—The total value of Wisconsin manufactured products in 1947 was $2,260,574, an increase of approximately 230% over the 1939 value. Most important industries in value of manufactured products were machinery (except electrical), fabricated metal products, motor vehicles, malt and malt liquors and primary metal industries. In 1948 the estimated average number of wage earners in Wisconsin manufacturing establishments was 337,100, compared with 339,700 in 1947 and 308,400 in 1946, while the average aggregate weekly pay roll had increased from $17,800,000 in 1947 to $19,200,000 in 1948.

Table II.—*Value of Mineral Products of Wisconsin*

Mineral	1947	1946
Stone	$11,669,611	$11,473,119
Iron ore	5,108,260*	3,369,236*
Zinc	2,958,208	3,483,344
Sand and gravel	9,938,778	6,902,929

*Estimated.

Mineral Production.—In 1947 the value of all mineral production in Wisconsin was $34,942,000 compared with $28,596,000 in 1946 and $22,217,000 in 1945. (C. L. L.)

Withholding Tax: *see* TAXATION.

Woman's Christian Temperance Union, National: *see* SOCIETIES AND ASSOCIATIONS.

Women's Clubs, General Federation of: *see* SOCIETIES AND ASSOCIATIONS.

Wool. World production of both apparel wools and carpet wools in 1949 was estimated to have increased 1.5% over 1948 to a total of 3,768,000,000 greasy pounds. The production for 1948 and 1949 of the principal wool-producing countries of the world is shown in the table.

World Wool Production
(greasy shorn pounds)

Country	1949	1948
Australia	1,080,000,000	1,015,000,000
New Zealand	365,000,000	357,000,000
Argentina	460,000,000	495,000,000
Uruguay	160,000,000	160,000,000
South Africa	218,000,000	189,000,000
United States	274,000,000	320,000,000
Total	2,557,000,000	2,536,000,000
Others (including carpet wools)	1,211,000,000	1,176,000,000
Grand total	3,768,000,000	3,712,000,000
Apparel type	2,998,000,000	2,943,000,000
Carpet type	770,000,000	769,000,000

Source: International Wool Secretariat, amended by N.Y. Wool Exchange.

There continued to be a greater demand for fine wools throughout the year than was available to the world wool trade. This was borne out by the keen bidding for wools in all major markets. Australia exported approximately 1,284,000,000 greasy shorn pounds, or 204,000,000 lb. more than were shorn. Only in Argentina of the major wool-producing countries were exports and local consumption considerably less than production.

One new factor which tended to change the movement of wools in international trade was the aggressiveness of many wool-producing nations, including Australia, the Union of South Africa, Argentina and Uruguay, in developing their own wool manufactures. These four countries were progressively using more wools themselves than formerly, and exporting them as semimanufactured or finished goods. A few of the large producing nations reported that the downward trend in the growing of merino or fine wools appeared to have ended, and that breeding indicated a gradual increase in their production.

In addition to disposing of most of the 1949 clips, the United Kingdom-Dominion Wool Disposals Limited reported on June 30, 1949, that its stocks of wools were about 460,000,000 lb. less than on June 30, 1948, and that the weight of wools remaining under its control totalled about 540,000,000 lb., a large part of which represented defective wools. The stock pile of wools under the control of this joint organization was probably reduced another 200,000,000 lb. by the end of the year, leaving only 300,000,000 lb. still to be sold out of an original total of more than 3,000,000,000 lb.

The Commodity Credit corporation, a U.S. government agency, reported on Sept. 30, 1949, that its stock pile of wools totalled 88,000,000 lb., compared with 120,000,000 lb. on Sept. 30, 1948. At the end of the third quarter of 1949, 48% of the wools owned by the Commodity Credit corporation were the 1949 clip, 25% were 1948 wools, 11% were 1947 wools and 16% were 1946 and older wools.

United States imports of apparel wools were sharply curtailed during 1949. In the first eight months only 76,000,000 clean pounds were entered for consumption, compared with 284,000,000 lb. in the first eight months of 1948, and 250,000,000 lb. in the same period of 1947. This drastic decline in U.S. wool imports caused a sharp contraction in wool stocks, it being estimated that on Dec. 1 apparel wools in the United States represented about 168,000,000 clean pounds, compared with 274,000,000 lb. on Dec. 1, 1948, and a high of 488,000,000 lb. on Dec. 1, 1946. Conversely, wool stocks in Argentina tended to accumulate, because of the relatively small amounts which were exported.

Consumption of apparel-type wools was sharply curtailed in the United States, but elsewhere there appeared to have been broadening wool-textile activity.

For the greater part of the year, prices in the United States were above the government support level, which factor accounted for less government buying than in the preceding year. Prices of domestic wools in the United States, after some firmness during the first quarter, entered a slow decline from an average of around $1.52 per clean pound in the Boston wool market to $1.38 in October. A better demand in the final quarter lifted prices slightly.

Using Australian wools as a pattern for foreign wool prices in the United States, fine Australian wools, duty paid in Boston, American yield, began the year at $2.18. Less demand, rather than replacement values, caused Australian wools to decline in price in the Boston market, with a substantial drop to $1.45 in late September, following currency devaluations. Thereafter, a firming tendency in Boston coincided with rising prices at the wool sales in Australia. The year closed with fine Australian wools quoted in Boston around $1.60.

In the foreign wool markets, prices also became somewhat lower in late spring and summer. In the pence markets, Australian fine wools were quoted around 97*d.* the first of the year in London. By June these same wools had declined to about 88*d.* A further sharp drop, recorded when sterling was devalued, was followed by rapidly improving prices, so that at the end of the year the so-called pence markets were above January quotations. Many expected benefits from devaluation were thereby erased before the end of the year.

In October, the United States congress approved a new farm support bill, the terms of which became effective on Jan. 1, 1950. This bill, as it specifically refers to wool, follows:

> The price of wool (both shorn and pulled, including mohair) shall be supported through loans, purchases, or other operations at such level, not in excess of 90 per centum nor less than 60 per centum of parity price therefor, as the Secretary determines necessary in order to encourage an annual production of approximately three hundred and sixty million pounds of shorn wool. (Parity price for wool and mohair will be computed according to a 'modernized' system, figured on the farmers' 'fair return' in the past ten years and including farm labor costs.)

The formula for the new parity price under which this bill would operate was expected to be about three cents above the old parity, and therefore the income of wool growers would also be greater than formerly. The Commodity Credit corporation, however, would be able to sell the wools acquired at the current market level, even though it were lower than the price paid for the wools. (*See* also Textile Industry.)

(S. L. L.)

Words and Meanings, New. English adds many new words to its vocabulary every year, some destined to live long, others to die soon. The words listed below, pertaining largely to 1948–49, are but a small residue of those collected by the committee preparing this article.

Several groups of the coinages below may be commented upon briefly. As usual, scientific and technological advances were well represented among the new words: witness "afterburner," "Airdent unit," "automation," "avionics," "Benthoscope," "BINAC," "hydrogen bomb," "hypersonic," "nuclear reactor" and "rotochute." Medical science was represented by such coinages as "Antabuse," "banthine," "botogenin," "neomycin," "space medicine," and "tibione (TB-1)." New terms like "bizone," "dollar gap," "neo-Nazism," "Titoism," "Unescan" and "wetback" reflected the international scene. The U.S. scene was represented by a number of interesting coinages reflecting a wide variety of fields and activities from national politics to fashions: for example, "canasta," "five percenter," "me-tooism," "no-day (work) week," "Operation 'Haylift,'" "Pyramid club," "sanity code" and "scatter pins." Of especial interest to Americans in 1949 seemed to be the ideas and things described by the terms "ACTH," "antihistaminic," "cortisone," "Fair Deal," "statism" and "welfare state."

New terms for television were still vying for recognition. At the end of 1949, "TV" seemed to be established as the informal term, "television" the formal.

The words listed below became prominent or were seemingly used for the first time during 1948 and 1949. Dates within the parentheses following a word or definition indicate the first recorded use of the new word or meaning in the files of the committee.

A preceding hyphen means that the word or meaning is suspected to be older than the date given. If no date is given, the first record on file is 1949.

ACTH. Adrenocorticotropic hormone, a hormone secreted by the pituitary gland, being studied as a possible cure for arthritis.

afterburner, *n.* A ram-jet booster engine. (1948)

Airdent Unit. An instrument developed by Robert B. Black for drilling teeth with an abrasive directed by a fine stream of compressed air. Trade-mark.

Antabuse (*anti*+*abuse*), *n.* Tetraethylthiuramdisulphide, a drug developed in Denmark, which was reported to counteract alcoholism. Proprietary name. (1948)

antihistaminic, *adj.* Pertaining to that which opposes histamine, a body substance which weakens the defenses of the body, as against the cold virus. Also *n.* (**antihistamine,** *n.* is older)

Antrycide, *n.* Synthetic drug developed in England to combat the tsetse fly. Trade-mark. (1948)

APF. Abbreviation of "**animal protein factor,**" a vitamin complex in which vitamin B_{12} is a dominant factor.

apparatus, *n.* An organized group operating secretly. (1948)

automation (*automatic*+*-tion*), *n.* (1) The study which attempts to increase the automaticity and efficiency of manufacturing processes; (2) The automaticity of a process. (Coined by D. S. Harder, a vice-president of the Ford Motor company.)

avionics (?*avi*ation+electr*onics*), *n.* *Aeronautics.* Term proposed by the magazine *Aviation Week* to cover "the applications of electricity to the field of aeronautics."

banthine, *n.* A synthetic drug to relieve peptic ulcer. It is taken by mouth.

beefcake (Imitation of *cheesecake*), *n.* *Humorous.* The exposure of men's chests.

Benthoscope (Gr. *benthos*, "sea-depth,"+*skopein*, "to look at"), *n.* A strong steel sphere, large enough for a man, for deep-sea diving and observation. (1945)

bikini, *n.* An abbreviated bathing suit for women. (–1948)

BINAC, *n.* Trade-mark used to describe an automatic, electronic computing machine employing the binary system of numbers.

bizone (backformation from *Bizonia*, *bizonal*), *n.* The Anglo-American zone in western Germany. (1948)

bloodmobile, *n.* An automobile used to collect voluntary contributions of blood. (1948)

BNB, BNP. Insecticides, both of which were reported to be safer to use and more powerful than DDT.

Bold New Program. Applied both to President Harry S. Truman's **Fair Deal** and to **Point Four** (*qq.v.* below.)

bonus player. *Baseball.* A free agent signing a player's contract with a major or minor league club for a sum in excess of the amount allowed for that class of league in the major league agreement. (1947)

botogenin, *n.* A substance found in the Mexican yam (*Dioscorea mexicana*), investigated as a good source of **cortisone** (*q.v.* below).

bracero (Sp.), *n.* A Mexican contract labourer. (–1945)

breeder reactor. *See* **reactor,** below.

brushed leather. Suede leather, technically known as reversed calf.

Cana Movement. The doctrine that God must enter into every marriage. (1948)

canasta (Sp.), *n.* An Argentine game with some features of rummy.

Capacitron, *n.* A cyclotron developed by Arno Brasch and others, with such commercial applications as the sterilizing and preservation of food. (1947)

cellano, *n.* A fourth type of human blood, so called from the family name of the mother through whom it was found.

chucks, *n.* *Teen-age slang.* Something humorous.

cold rubber. A synthetic rubber made at a low temperature (41°F.) and characterized by strength and toughness. (–1948)

community college. A junior college designed to serve the needs of its community.

Compound E. *See* **cortisone,** below.

cortisone, *n.* Short for the chemical 17-hydroxy-11 dehydrocorticosterone, a hormone from the adrenal cortex used experimentally to control and eliminate arthritis. The name was coined by Edward C. Kendall and Philip S. Hench and announced by Kendall, the discoverer of the chemical. Formerly called **Compound E.**

Council of Europe. A group composed of representatives of the democracies of Europe.

delta-wing plane. An aeroplane (Model 7002) made by the Consolidated Vultee Aircraft Corp. for the United States air force; shaped like the Greek letter delta and designed for near-sonic speeds at extremely high altitudes. (–1948)

depth interview. A lengthy, "qualitative" interview in which the interviewer considers the subject from all points of view and endeavours to explore the subconscious of the interviewee. (1948)

disposable income. Amount remaining after various government taxes have been deducted. (1948)

Dixiegop (*Dixie*crat+*GOP*, "Grand Old Party"), *n.* Coalition of Dixiecrats and certain Republicans in opposition to some of President Truman's measures, especially civil rights.

dollar gap. The shortage in dollar-exchange existing when a country's essential imports from a dollar area, such as the United States, exceed its exports to that area.

Dramamine (Arbitrary coinage), *n.* The registered trade-mark of G. D. Searle & Co. for dimenhydrinate, a potent, nontoxic, prophylactic and therapeutic drug (a synthetic organic chemical B-dimethylamino-ethyl benzohydryl ether 8-chlorotheophyllinate) for prevention and relief of motion sickness.

Earth Satellite Vehicle Program. Project of the United States for the study of guided missiles. (1948)

economy house. *Calif.* A very small house.

electronic brain. Term applied especially to such electronic calculators as **BINAC** (*q.v.*, above). (1947)

Fair Deal. (1) The policy of social improvement of President Truman, outlined in his message to congress, Jan. 1949; (2) Any similar policy. **Fair Dealer.**

feedlift, *n.* *See* **haylift,** below.

Firebird, *n.* Popular name of the XAAM-A-1 ("experimental air-to-air missile, air force, first model"), a ten-foot rocket-driven bomb finding its target and exploding near enough to damage it.

five percenter. A contract broker charging 5% for his services; specifically, a person promising to obtain a government contract for a business man for a fee of 5%. Also called **peddler of influence.**

freeze-drying, *n.* Quick-freezing followed by heat-drying in a vacuum cabinet.

Geigers (after *Geiger* counter), *n. pl.* *Popular.* Generic term for atomic rays and particles. (1948)

guppy, *n.* *Popular.* A snorkel submarine. (1948)

haylift, *n.* An air lift (**Operation "Haylift," "Hayride," "Snowbound"**) for the transportation and dropping of feed for starving cattle in the west and the midwest, snowbound by a heavy storm in Jan. 1949. Also **haydrop,** *n.*

Howdy Doody. A popular doll puppet, first used on a television show. (1948)

hunter-killer, *adj.* *Mil.* Pertaining to that which stalks and attacks with destructive intent. (1945)

hydrogen bomb. The theoretically possible atomic superbomb estimated to be a thousand times more powerful than bombs using plutonium, with heavy hydrogen as the most important ingredient. (1948)

hypersonic, *adj.* Faster than 2,700 m.p.h. (–1946)

Inductive Telephone. A radio telephone for trains. (–1946)

Jetliner, *n.* A jet-propelled airliner. Trade-mark.

jury, *v.* To act as a member of a group which selects entries for an art exhibit. (–1947)

kigmy, *n.* A small animal which enjoys being kicked, created by Al Capp, cartoonist.

killer ship. A **hunter-killer** (*see* above) ship; a surface craft to spot and sink enemy submarines. (*Cf.* **hunting flotilla** of World War I)

Machometer (after Ernst *Mach*), *n.* An instrument which expresses speeds, especially those in the supersonic range, in terms of their relation to the speed of sound. (1946)

me-tooism, *n.* Term used to describe the acquiescence of some Republicans in policies of the Democratic party.

NATIV. Abbreviation of North American Test Instrument Vehicle, a guided missile 13 ft. long and 18 in. in diameter developed by the United States air force for studies in aerodynamics in the high-speed range.

neomycin, *n.* An antibiotic isolated by S. A. Waksman from actinomycetes, of promise in the treatment of tuberculosis.

neo-Nazism, *n.* A rightest movement designed to revive former nazi principles and beliefs. (1947; **neo-Nazi,** 1938)

no-day (work) week. Cessation of work; euphemism for a strike.

nuclear reactor. *See* **reactor.**

Operation "Haylift," "Hayride," "Snowbound." *See* **haylift,** above.

paramilitary, *adj.* Equal to, as important as, military.

paranurse, *n.* A nurse trained to parachute to the spot where first aid is needed. (1948)

parlay, *v. i.* To exploit (something) with marked success: "to parlay a grin into fame." (1942; extension of betting term)

peddler of influence. *See* **five percenter**, above.

phytotron (Gr. *phyto-*, "plant,"+*-tron*), *n.* A laboratory designed by the California Institute of Technology to bring about varying weather conditions so that their effect on plant life may be studied.

pitch-out, *n. Football.* A short lateral pass behind the line of scrimmage, usually from the quarterback to another back. (–1947)

Point Four. The fourth point in President Truman's **Fair Deal** program, namely, aid, technical and otherwise, to economically underdeveloped countries.

prestressed, *adj.* Pertaining to concrete reinforced with high-tension steel wires pulled taut.

purity code. *See* **sanity code**, below.

Pyramid (Friendship) Club. A get-rich-quick scheme, similar to the chain letter, except that money was exchanged personally rather than by mail. **pyramider,** *n.* One who joined a **Pyramid Club.**

radiac set. A compact instrument for "radioactivity detection, identification and computation."

RATO. Rocket assist for take-off. (1945)

reactor, *n.* An atomic pile, in which the production of atomic energy can be controlled. (–1947) Often called a **nuclear reactor.** (1946) The **breeder reactor** produces more atomic energy than is required to operate it. (1948)

rotochute, *n.* A supersonic parachute for the lowering of delicate research instruments from rockets which have been shot to high altitudes.

sanity code. A code adopted by the National Collegiate Athletic association in Jan. 1948, designed to curb and control the recruiting and subsidizing of college athletes. Also called **purity code.**

scatter pins. Small pins "scattered" over a woman's dress; generally used in groups of two or more. (–1948)

simulcast (*simul*taneous+broad*cast*), *v.* To transmit *radio* and *television* at the same time. (1948)

space medicine. Proposed branch of medicine to investigate the conditions of outer space and try to determine their effect on the human body.

statism, *n.* Direction and control by a centralized government of important aspects of the economic life of the citizen. (–1948)

TB-1. *See* **tibione.**

teenicide, *n.* The seeming, wholesale self-destruction of teen-age automobile drivers. **teenicider,** *n. Nonce words.*

tibione, *n.* A drug (chemically 4-acetyl-amino-benzaldenyde-thiosemicarbasone) derived from coal tar and used with streptomycin in the treatment of tuberculosis. Also **TB-1.**

Titoism, *n.* (1) The principles and policies of Marshal Tito of Yugoslavia, especially his advocacy of a communism placing national interests above international, or specifically Russian; (2) Any similar policy. **Titoist,** *n.*

toe, *n. Football.* A player used only for kicking: kickoffs, placements, and, especially, points after touchdown. (–1947)

Unescan, *n.* One who participates in the activities of U.N.E.S.C.O.

Uni-. Short for "united military command" (of the Council of Europe [the western European union]), as provided by the Brussels pact; employed as a combining form. *See* also **Uniair, Uniforce, Unilion, Unimer, Uniter,** below.

Uniair. The air command of the western Union.

U.N.I.C.E.F. United Nations International Children's Emergency Fund. (1948)

Uniforce. The combined command (air, sea and land) of the western union.

Unilion. Chairman of the commanders in chief of the western union.

Unimer. Sea command of the western union.

United States of Indonesia (U.S.I.) Projected for several years, this federation of 16 states was formally set up in Dec. 1949, with the Netherlands as copartner. (–1947)

Uniter. Land command of the western union.

Veep (from *VP*, vice-president), *n.* (1) The vice-president of the United States; (2) (l.c.) Any vice-president.

Veepa, Veepess, *n. Humorous.* Wife of the vice-president of the United States. *Nonce words.*

welfare state. A state whose government assumes the responsibility for providing such social services as unemployment insurance, medical treatment, free milk for school children and old age pensions. (1945) **welfarism,** *n.*

wetback, *n.* A Mexican labourer who, in order to obtain work in the United States, illegally enters the country by swimming or wading the Rio Grande. (1944) (I. W. R.)

World Bank: *see* INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT.

World Commerce: *see* INTERNATIONAL TRADE.

World Council of Christian Education: *see* RELIGIOUS EDUCATION.

World Council of Churches: *see* RELIGION.

World Government: *see* INTERNATIONAL LAW.

World Health Organization: *see* CHILD WELFARE; UNITED NATIONS.

Wrestling.

Iowa State Teachers college won the U.S. Amateur Athletic union team crown in the national championships at Cedar Rapids, Ia., scoring 37 points to defeat Cornell college of Mt. Vernon, Ia., by 5 markers.

A strong band of Oklahoma A. and M. grapplers captured the National Collegiate Athletic association title for the 16th time in 19 years, with 32 points in the annual tourney at Ft. Collins, Colo. Iowa State Teachers finished second in this meet with 27 tallies.

A list of individual champions follows:

National A. A. U.

115-lb.—Arnold Plaza, Purdue; 121-lb.—John Harrison, Iowa Teachers; 128-lb.—Russell Bush, Iowa Teachers; 135-lb.—Lowell Lange, Cornell college; 145-lb.—Keith Young, Iowa Teachers; 155-lb.—William Nelson, Iowa Teachers; 165-lb.—William Smith, Iowa Teachers; 175-lb.—Shufard Swift, Navy; 191-lb.—Vern Gagne, Minnesota; unlimited—Robert Maldegan, Michigan State.

National Collegiate A. A.

121-lb.—Arnold Plaza, Purdue; 128-lb.—Charles Hetrick, Oklahoma Aggies; 136-lb.—Lowell Lange, Cornell college; 145-lb.—Keith Young, Iowa Teachers; 155-lb.—William Nelson, Iowa Teachers; 165-lb.—William Smith, Iowa Teachers; 175-lb.—James Gregson Oklahoma Aggies; heavyweight—Vern Gagne, Minnesota. (T.V.H.)

Wyoming.

A Rocky mountain state of the United States, Wyoming was admitted to the union on July 10, 1890, as the 44th state. Having been a leader in extending rights to women, it is known as the "Equality state." The land area is 97,914 sq.mi.; water area, 408 sq.mi. The 1940 census, totalling 250,742, listed rural inhabitants at 157,165 and urban at 93,577; 229,818 native white; 950 Negro; and 17,107 foreign-born. The July 1, 1949, estimate of the census bureau placed the population at 284,000.

The capital of Wyoming is Cheyenne, with an estimated population (1949) of 35,000. Other cities having an estimated population (1949) of 10,000 or more are: Casper (33,615); Laramie (14,000); Sheridan (14,612); and Rock Springs (12,000).

History.—State officials during 1949 were: governor, A. G. Crane, filling out the unexpired term of Lester C. Hunt, who was elected to the U.S. senate in Nov. 1948; auditor, Everett T. Copenhaver; treasurer, C. J. Rogers; and superintendent of public instruction, Edna B. Stolt. Justices of the state supreme court were Fred H. Blume, Ralph Kimball and William A. Riner. The state house of representatives, elected in Nov. 1948, was evenly divided (28–28) between Democrats and Republicans, and the state senate was predominantly Republican (18 Republicans and 9 Democrats).

Education.—In 1948–49 there were 580 elementary and rural schools in Wyoming with 1,118 elementary teachers and 520 rural teachers, and a total enrolment of 43,681. There were 88 accredited high schools, with 824 teachers and an enrolment of 13,475.

Social Insurance and Assistance, Public Welfare and Related Programs.—Funds spent on public welfare during the year ending Sept. 30, 1949, were as follows: old age assistance $2,742,562; aid to dependent children $536,585; aid to the blind $64,274; general welfare $366,068; child welfare $25,104; general welfare health $363,352.

There were three correctional institutions with inmates (average) and appropriations as follows: state penitentiary at Rawlins (310 inmates) appropriation $358,150; girls' school at Sheridan (45 inmates) appropriation $156,750, capital outlay $27,740; boys' school at Worland (48 inmates) appropriation $142,500, capital outlay $87,400. The appropriations are for the years 1949–50.

Communications.—During 1949 the Wyoming highway department let approximately 75 contracts for a total expenditure of $7,950,099. This work was spread over a total mileage of 512.64. The highway system in Wyoming at the year's end consisted of 4,595 mi., of which 1,220 mi. were secondary routes. It is a policy in Wyoming for the state to take into the state highway system all routes constructed with regular highway funds, including federal aid, unless there are peculiar circumstances or unusual conditions In 1948 the year closed with a total mileage of 4,496; therefore, it can be seen that the 512 mi. shown as the total of the contracts let served to increase the system by 99 mi. The remainder was for renovation and reconstruction of existing routes.

The 1949 maintenance budget, which covered the period ending April 1, 1950, was set at $2,500,000; it was anticipated that the budget would run over about 10%. Railroad mileage remained stationary at 1,912 mi.

Banking and Finance.—On Dec. 31, 1949, there were 29 state banks with deposits of $81,069,433.94. There were 24 national banks with deposits of $175,014,568. Total state receipts for the fiscal year ending Sept. 30, 1949, were $63,016,536.87. Total disbursements for the same period were $39,188,666.15. The bonded debt for the state on Sept. 30, 1949, was $1,020,000.

Agriculture.—Crop production in Wyoming during 1949 was slightly above the previous year. Farm products were valued at an estimated $66,000,000. Wyoming livestock on the farm was valued at $177,219,000 during the year 1949 (*See* Table II.)

Table I.—*Leading Agriculture Products of Wyoming*

	1949	1948	Average 1938–47
Corn, bu.	1,085,000	1,008,000	1,521,000
Winter wheat, bu.	6,364,000	5,100,000	2,779,000
Spring wheat, bu.	1,435,000	1,558,000	1,395,000
Oats, bu.	3,982,000	3,960,000	3,981,000
Barley, bu.	5,310,000	4,730,000	3,335,000
All hay, tons	1,283,000	1,018,000	1,241,000
Dry, edible beans, cwt.	1,089,000	1,197,000	912,000
Sugar beets, tons	392,000	310,000	467,000
Potatoes, bu.	1,870,000	2,280,000	2,087,000

Table II.—*Number and Value of Livestock in Wyoming*

	Number on Farms, 1949	Value
Cattle	1,011,000	$132,441,000
Hogs and pigs	85,000	3,018,000
Stock sheep	1,980,000	36,234,000
Sheep and lambs on feed	90,000	1,530,000
Horses	84,000	2,552,000
Mules	1,000	41,000
Chickens	789,000	1,169,000
Turkeys	28,000	235,000
Total		$177,219,000

In 1949, Wyoming ranchers sheared 1,782,000 sheep, producing 17,285,000 lb. of wool which sold for $8,297,000. It was estimated that there were 11,500 farms in Wyoming, the average size being 2,525 ac.

Mineral Production.—Mineral production in Wyoming for 1949 was estimated as follows: bituminous coal, 5,972,640 tons, estimated value at $47,780,000; oil, 47,467,000 bbl.; bentonite, 40,000 tons; and trona, 70,000 tons, the trona being processed as soda ash for fertilizer.

Employment.—Total employment in the state as of Dec. 1949 was estimated at about 114,546—55,250 of whom were covered by unemployment compensation. The largest single group, ranch and agricultural workers, was estimated at 30,000; railroad employees, 8,900; wholesale and retail trades, 18,306; employees of government (all levels), 14,100; service industries, 8,544; contract construction workers, 9,059; transportation, communication and utilities, 4,931; mining, 9,752; finance, insurance and real estate, 1,694; manufacturing, 7,020; professional, 2,186; and miscellaneous, 54. (A. G. Cr.)

X-Ray and Radiology.

Important advances were made during 1949 in angiography of the cardiovascular system of the chest and of the brain. Angiocardiography, the visualization of the thoracic blood vessels and the heart through the use of X-ray photographs, had been established as a practical method of diagnosis in 1938 by G. P. Robb and Israel Steinberg. During 1949 Steinberg, along with C. T. Dotter, published the results of 11 years' experience with the method. It had added materially to accuracy in diagnosis of intrathoracic disease. Along with cardiac catheterization it proved invaluable for accurate diagnosis in congenital heart disease, especially since many congenital anomalies could be corrected by surgical operations.

Cerebral angiography, used in the diagnosis of intracranial lesions, was originated in 1927 by Egas Moniz, of Lisbon, Portugal. Advances which took place in angiography during 1949 consisted in the provision and improvement of methods and apparatus. Two devices were perfected which greatly facilitated the roentgenographic technique, one called the seriograph and the other the roll film cassette.

The seriograph consists of a cassette magazine mounted in a portable cabinet adjustable in height to adapt it to various table heights. The cassette changer holds six specially designed cassettes, each with intensifying screens and each backed by a thin layer of lead to provide protection of underlying films during exposure. An exposure-activating device and an automatic cassette-shifting device operate in such a way that following each exposure the cassette is removed and an unexposed one shifted into position for the next exposure, the series continuing until completion of the six exposures. The device provides that the successive exposures are made at predetermined intervals—0.7 sec. for cerebral angiographs and 2.5 sec. for angiocardiographs. The exposure time for each film is set at 0.1 sec. or less, the total elapsed time for the six films being 4.5 sec. This apparatus serves to make films during the successive opacification of the arteries, capillaries and veins of the brain.

PLASTER MOULD of head of patient being used to check alignment of positioning device, prior to application of betatron's 25,000,000-ev X-ray beam for treatment of cancer. The betatron was being used in 1949 for cancer research and treatment at the University of Illinois college of medicine in Chicago

The roll film cassette consists of two main components—a motor base plate and a detachable roll film magazine. The capacity of the magazine is 75 ft. of film, $9\frac{1}{2}$ in. wide, and sufficient for approximately 75 exposures. Operation is accomplished automatically and continuously in conjunction with the X-ray tube control at the rate of two exposures per second. The film is automatically advanced in the magazine when the motor circuit is closed, and when the film is in proper position for exposure it is automatically compressed between two intensifying screens. A Bucky grid is in constant motion during the exposures.

Two important papers were published in 1949 which pointed to new possibilities in the application of radiation to the treatment of cancer. They dealt with the use of the betatron in the production and utilization both of free electrons and of roentgen rays at high voltages. The betatron is a machine by which electrons produced from a tungsten filament are injected into a vacuum chamber between the poles of an alternating current electromagnet and by the energy of the increasing electromagnetic field finally reach an energy of 20,000,000 ev. If it is desired to produce roentgen rays, the electrons are directed against a tungsten target. By removing the target it was possible to obtain a beam of electrons which could be controlled and directed outside of the machine and which at the high voltage of 20,000,000 ev could penetrate tissues to a depth far beyond that which was possible with the electrons produced by the voltages hitherto used for production of roentgen rays. They had an important advantage over roentgen rays in that their highest concentration of energy was not at their source but at the end of the beam. A beam of free electrons could therefore be applied in such a manner that its greatest energy was exerted in the tumour itself instead of in the skin and superficial tissues. While much experimental work was still necessary before this new agent could be practically and safely applied in the treatment of cancer, it offered hopeful possibilities for progress in this field.

It was not only in the production of free electrons that the betatron offered possibilities of advance but in the production of roentgen rays with the tremendous penetrating qualities afforded by the 20,000,000 ev energy. H. Quastler and his coworkers described the treatment of a single case of cancer of the brain by roentgen rays produced by the betatron at 20,000,000 ev. As was the case in the use of free electrons, this treatment was still in the experimental stage. (*See* also ATOMIC ENERGY; CANCER; PHOTOGRAPHY; TUBERCULOSIS.)

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(A. C. Ch.)

Yachting.

The winning of several major ocean and long coastwise races in different parts of the world by yachts of relatively light displacement type was a feature of the 1949 yachting season. On the Pacific, "Kitten," a 46-ft. over-all PCC class sloop owned by Fred W. Lyon, California, won the 2,225-mi. Los Angeles-to-Honolulu race. This was a fast, fair-wind race in which the scratch boat, Richard S. Rheem's 98-ft. schooner "Morning Star," set a new course record of 10 days 10 hr. 13 min. 9.5 sec. Prior to starting the Honolulu race on July 4, "Kitten" had opened her racing season in May by beating a fleet of 122 yachts in the 144-mi. Ensenada race in southern California and Mexican waters. A sister ship to "Kitten," Dr. Philip R. Smith's "Gossip," Seattle, won the Tri-Island series of three long-distance races in the Puget sound area.

In British waters Capt. John H. Illingsworth's sloop "Myth of Malham" won the stormy 600-mi. Fastnet Rock race, in which only 10 of the 29 starters finished. Earlier, Capt. Illingsworth had made the best corrected time in a big fleet of top-flight ocean racers in the cross-channel Cowes-Dinard race with "Minx of Malham," a smaller edition of "Myth," which he also owned and sailed. A sister ship to "Minx," Maj. R. Schofield's "Blue Disa," won another major British event, the Wolf Rock race. These widely separated triumphs focused interest of ocean-racing skippers on the controversial question of the desirability of lightly-built, racing-type craft for offshore competition.

In international six-metre class racing, Sven Salen, Sweden, sailing "Maybe VI," won the Scandinavian Gold cup in a series in Norway in which sixes from half a dozen countries participated. Four U.S. sixes racing at Cowes, Eng., "Goose," Dr. George Nichols, Jr., "Llanoria," Emil Mosbacher, Jr., "Fire-

LIGHTNING CLASS YACHTS nearing the finish line in the third heat for the international championship held in Biscayne bay, Fla., in Sept. 1949. Richard P. Bertram, defending champion, retained the title by winning two out of three of the races

cracker," Herman F. Whiton, and "Noa," James Sheldon, defeated a British team, four races to two, and permanently retired the British-American cup.

In addition to the ocean races mentioned above, long-distance sailing events in general were numerous and drew large fleets. In Florida waters Palmer Langdon's Rhodes-27 class sloop "Tiny Teal" won the St. Petersburg-Havana and Lipton Trophy races and took the Florida Governor's cup as the outstanding yacht in the five races of the "southern circuit." Other races in this group were the Miami-Nassau, won by "Blitzen," Murray Knapp and Ernest Grates; the Cat Cay race, won by "Katuna," Gilbert Verney, and the Nassau Governor's Trophy race, won by "Malabar XIII," Morgan Butler. Other long-distance race winners during the year included "Alar," David Z. Bailey, Newport-Annapolis race; "Onkahya," George Sollitt, Bayview-Mackinac race; "Taltohna," E. B. Tolman, Jr., and "Cara Mia," L. L. Karas, Chicago-Mackinac race; "Valkyrie," John MacDonald, Marblehead-Halifax race; "Chanteyman," E. L. Raymond, Jr., Stamford-Vineyard race; "Avolonte," A. G. Woodley, Swiftsure Lightship race, and "Revonoc," Harvey Conover, Storm Trysail club's Block Island race.

Among international class champions crowned during the year were Harry G. Nye, Jr., Chicago, Star class; Richard Bertram, Miami, Lightning class; Ted Wells, Wichita, Kan., Snipe class; and Howard Lippincott, Riverston, Del., Comet class. Charles Currey, British dinghy skipper, won the Princess Elizabeth trophy for 14-footers in a Bermuda-Canada-England-U.S. series held at Bermuda. U.S. teams defeated Bermudians twice in a home-and-home series in International class sloops, and once in an L-16 class team series at Greenwich, Conn.

American national champions who won their titles during the year included the Yale university crews, which took the intercollegiate Morss bowl; the Cohasset (Mass.) Yacht club crew headed by Kingsley Durant, winners of the Sears bowl and national junior title; and the Portland (Me.) Yacht club crew headed by Jane Smith, which took the national women's championship.

While the trend in yachting throughout the world continued to be toward smaller yachts, the New York Yacht club cruise, stronghold of the larger yachts, brought out its largest fleet in several years. Winners of some of the historic trophies during this event were the new yawl "Bolero," John Nicholas Brown, winner of the Astor cup; the 12-metre class sloop "Anitra," W. Mahlon Dickerson, which took the King's cup, and "Niña," DeCoursey Fales, awarded the Cygnet cup as the outstanding schooner of the season. (W. H. Tr.)

Yeast. During 1949 it was announced that the chromosomes of the common yeast *Saccharomyces* had been mapped, so that this yeast had become as useful as the fruit fly, corn and the pink bread mould in the study of experimental breeding. As a result of this development, plus the thorough knowledge of the enzymatic constitution of the yeast cell, plus the ease with which yeast may be handled by standard bacteriological procedures, yeast became a prime subject for fundamental studies of physiology and biochemical genetics. Much of the basic biological research done with yeast during the year was aimed toward ultimate application to the human being, as demonstrated by the support of such research by organizations fostering the quest for the cause and cure of cancer. Extension of biochemical findings made with yeast to the animal organism was further validated by proof during 1949 of the basic similarity between cell-free fermentation of yeast and animal tissue glycolysis (breakdown of animal starch).

Although studies of yeast physiology published during 1949 were too numerous to list completely, the following are cited as representative: several steroids and diethyl stilbestrol were found to stimulate the endogenous respiration of yeast; the Harden-Young effect in cell-free alcoholic fermentation of yeast was attributed to removal, destruction or inhibition of adenosine triphosphatase; it was suggested that the toxicity of selenate to yeast results from a blocking of synthesis of the amino acid methionine; some yeasts were shown to be able to utilize certain amino acids as carbon sources for growth; the requirements of brewery yeasts for growth and fermentation factors were explored by means of synthetic media.

Advances during the year in technological applications of yeast included: in the baking industry fermentation activity and survival of yeast in frozen fermented and unfermented doughs were studied; in the dairy industry yeast was found to play an essential role in surface ripening of brick cheese; in the wine industry inoculation with ester-producing yeasts was used to enhance flavours of wines. A yeast fermentation producing nearly a pound of fat from a gallon of molasses received attention from the United Nations Scientific Conference on the Conservation and Utilization of Resources.

Among discoveries during 1949 in the field of yeast production, certain food yeasts were shown to be able to utilize for growth nonsugar compounds in molasses; a synthetic medium giving high yields of yeast was reported; asparagus waste and citrus peel press liquor were added to the list of by-products suitable for use as substrates in yeast production.

Isotopically labelled nucleic acid was prepared from yeast and was used to study the metabolism of nucleic acid in animals. The nucleic acid content of yeasts was shown to depend upon the substrate and conditions of cultivation. The effect of yeast autolysate in elevating body temperature when injected subcutaneously, but lowering body temperature when injected intraperitoneally, was attributed to the nucleic acid present in the autolysate. Yeast cells were used to study the food selectivity of oysters.

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(F. W. N.)

Yemen. An independent state in the southwestern tip of the Arabian peninsula, Yemen lies between Saudi Arabia to the north, the British Aden protectorate to the southeast and the Red sea to the west. Area: *c.* 31,000 sq.mi.; pop. (1948 est.): 1,600,000. Language: Arabic. Religion: Moslem. Capital: San'a (pop. est. 25,000). Ruler: Sayf al-Islam Ahmad ibn Yahya.

History.—The isolation of Yemen during 1949 was greater than it had ever been. After the overthrow of Abdullah Ibn Ahmed al Wazir's regime in 1948 and the numerous executions of leading men which followed, the new imam did not return to San'a but set up his capital at Ta'izz. Conditions continued unsettled. A revolt of Rasasi tribesmen broke out in February and was crushed by the imam, who was reported to have executed 33 tribal leaders. British royal air force aircraft from Aden were reported to be making bombing raids on border forts early in March owing to violations of British territory by the tribesmen. On Sept. 2, after giving due warning, R.A.F. bombers destroyed a fort which was being erected by Yemenis in the territory of the western Aden protectorate.

Yemen took very little part in the proceedings of the Arab league. Trade negotiations were carried on with Egypt and with India by Qadi Muhammad Ibn Abdullah al-Imari, a special envoy of the imam. A trade agreement with Lebanon was signed in February. Relations with Great Britain were discussed with the imam at Ta'izz in Nov. 1948 by the governor of Aden, Sir Reginald Champion, who in Feb. 1949 conveyed to London Yemen's requests for British technical and medical assistance. In March it was announced that Sir Reginald would be British representative in Yemen as well as governor of Aden. The imam underwent an operation in March, an Italian surgeon having been brought by air from Asmara, Eritrea. In November it was reported that most of Yemen's remaining Jews had been evacuated through Aden to Israel.

Finance.—The monetary unit is the Maria Theresa dollar, called the riyal, nominally=Rs.1 (Indian), or 21 cents U.S. (Nov. 1949). (C. He.)

Foreign Trade.—Principal imports are manufactured goods. Principal exports are coffee, barley, wheat millet, hides, charcoal, raisins.

Young Men's Christian Association: *see* SOCIETIES AND ASSOCIATIONS.

Young Womens Christian Association: *see* SOCIETIES AND ASSOCIATIONS.

Yugoslavia.

A federal People's Republic of southeastern Europe, Yugoslavia is bounded on the north by Austria, on the north and northeast by Hungary and Rumania, on the east by Bulgaria, on the south by Greece and on the west by Albania, the Adriatic sea and Italy. Area: (1940) 95,983 sq.mi.; (1947, including newly acquired territory of Julian march, Zara and the islands [2,843 sq.mi.]) 98,826 sq.mi. Pop. (1940 est.): 15,703,000. Federal republics (pop., March 15, 1948 census):

	Population	Capital	
Serbia (with the autonomous province of Vojvodina and the autonomous Albanian region of Kosovo-Metohija)	6,523,224	Belgrade	(388,246)
Croatia	3,749,039	Zagreb	(290,417)
Slovenia	1,389,084	Ljubljana	(120,944)
Bosnia and Hercegovina	2,561,961	Sarajevo	(118,158)
Crnagora (Montenegro)	376,573	Titograd	(12,206)
Macedonia	1,152,054	Skoplje	(91,557)
Total	15,751,935		

Other towns (pop., 1948 census): Subotica (112,551); Novi Sad (77,127); Rijeka, formerly Fiume (72,130). Languages: Serbo-Croat, Slovene and Macedonian; Albanian, Hungarian and Italian are also spoken by the minorities. Religions (1931 census): Greek Orthodox 48.7%; Roman Catholic 37.5%; Moslem 11.2%.

Chairman of the presidium of the people's assembly, Ivan Ribar; prime minister, Marshal Josip Broz (Tito) (*q.v.*).

History.—During the year 1949 Yugoslav-soviet relations continued to deteriorate. When the Paris conference of the Council of Foreign Ministers (*q.v.*) reached an agreement in June on the settlement with Austria which denied Yugoslavia its territorial claims in Carinthia, the Yugoslav government protested to the four powers. On June 22 the soviet government rejected the Yugoslav protest in an angry note, which accused Yugoslavia of having conducted secret negotiations with Great Britain on the Austrian question in 1947, "behind the back" of its soviet ally. A further soviet note of Aug. 12 described in detail these alleged negotiations and concluded that Yugoslavia was behaving "not as an ally but as an enemy" of the U.S.S.R. It also alleged that some strong and secret ties bound the Yugoslav government to the "camp of the foreign capitalists." A week later the soviet government accused the Yugoslav government of maltreating soviet subjects and stated that, if this continued, it would "have resort to other more effective means" to protect its subjects. The Yugoslav reply to this note drew a further reply from Moscow which included a long lecture on how Marxists ought to behave, illustrated with examples from the history of the Russian Bolshevik party. Following the Rajk trial in Budapest (*see* HUNGARY), the soviet government formally denounced on Sept. 27 its treaty of alliance with Yugoslavia (signed in April 1945). Within the next few days, Hungary, Poland, Rumania, Bulgaria and Czechoslovakia denounced their treaties with Yugoslavia.

The economic boycott of Yugoslavia by the Cominform countries was tightened during the first six months of 1949. The soviet-Yugoslav trade agreement of Dec. 1948 reduced the volume of mutual trade for 1949 to one-eighth of that of 1948. In June and July trade between Yugoslavia and Czechoslovakia, Poland and Hungary—the three Cominform countries whose exports were of greatest importance for Yugoslav economic planning—was brought to a standstill.

The Cominform boycott compelled the Yugoslav Communist leaders, with obvious reluctance, to seek greater trade, and to request credits, in the west. A short-term trade agreement with Great Britain was signed in Jan. 1949, providing for an exchange to the value of £15,000,000, up to Sept. 30, after which a more far-reaching agreement was to be made. In August an agreement was made with Italy, by which the value of mutual trade in 1949-50 was to be more than double that of the previous year. During the same month the United States government permitted the sale to Yugoslavia of a large steel plant and the International Monetary fund sold Yugoslavia $3,000,000 in return for the equivalent sum of Yugoslav dinars—which in effect amounted to a dollar loan. In early September the U.S. Export-Import bank gave a credit of $20,000,000, of which $12,000,000 were to be spent on U.S. equipment for the rehabilitation of Yugoslav mines.

Yugoslavia's economic situation remained critical during the year. Official statistics gave the usual optimistic percentage figures for the achievement of the five-year plan targets. But in fact the achievement was much smaller than the figures.

The need for manpower in factories, public works and mines was the main motive behind the collectivization of agriculture which had made more rapid progress in Yugoslavia than in any other country of eastern Europe. Collective farms, with their managing committees controlled by the Communist party, provided a more efficient central control of the state bureaucracy over the peasant masses than had ever yet existed. During the first six months of 1949 the number of collective farms (peasant labour co-operatives) rose from 1,300 to 4,500. In August about 20% of Yugoslav agriculture was collectivized, and in the richest agricultural province—Vojvodina—the proportion was nearly 40%. Yugoslav collectivization was fiercely denounced by Cominform propaganda because it was not accompanied by a thorough class war against the kulaks in the villages. The reason for the comparatively mild treatment of the more prosperous peasants who, in contrast to the rule in Cominform countries, were allowed in Yugoslavia to join collective farms, was that Tito's government, faced with external threats and internal economic crisis, was understandably eager to minimize the discontent.

There was absolutely no political liberalization. The Serbian and Croatian peasant party leaders were still in prison. The wishes of the non-Communist masses were ignored as before. Anti-Communist opinions were crushed no less ruthlessly than Cominformist Communist opinions. Tito counted on the patriotism of his people to back him against the external threat even if they disliked his regime. In the short term he was probably right, but he succeeded at the cost of a low national morale.

The most important action in Yugoslavia's own foreign policy was the decision to close the frontier with Greece, announced in July. Official Yugoslav spokesmen insisted that this action was directed equally against the Greek rebels and the Greek "monarcho-fascist" government. In practice, it operated in favour of the government. Ideological factors prevented friendship be-

MEMBERS OF A "VOLUNTEER" YUGOSLAV LABOUR BRIGADE on their way to a rural hay-cutting contest in 1949, with their long-handled scythes over their shoulders

tween the Yugoslav and Greek governments. But at least the Greek government was doing no direct harm to Yugoslavia, whereas the leaders of the Greek rebels, after the dismissal of Markos Vafiades in Jan. 1949 (*see* Greece), began to support the Bulgarian-sponsored agitation for a united Macedonia to be liberated from both Greece and Yugoslavia. The closure of the frontier put an end to Yugoslav help to the Greek rebels and greatly diminished the usefulness of Albania as a base for the rebels.

The negative *rapprochement* between Greece and Yugoslavia, resulting from the closure of the frontier, not only contributed to the defeat of the rebels by Greek national forces during the summer but provided the Soviet Union with a further motive for hatred of Yugoslavia. The only remaining soviet vassal on the Adriatic, Albania, was linked with the Cominform world only by occasional soviet, Rumanian or Polish ships which had to pass through the Turkish straits or through the Baltic and Gibraltar. The strategic importance of Macedonia in soviet eyes increased, as it was a link not only from north to south—from central Europe to the Aegean—but also from west to east—from Adriatic to Black sea.

At the end of the year Yugoslavia's position was dangerous but not impossible. Tito and his colleagues were experts both in guerrilla warfare and in police terror. It was unlikely that rebellion in Macedonia would hold great terrors for them. Nor had they much reason to fear the attack of their satellite neighbours. Despite a barrage of insults, and a violent protest by A. Y. Vishinsky when Yugoslavia was elected to the U.N. Security council in October, there was no sign that the U.S.S.R. planned invasion. The attitude of the western powers in the event of invasion was also uncertain. (*See* also Albania; Trieste, The Free Territory of.)

(H. S-W.)

Education.—(1947–48) Schools, elementary 12,052, pupils 1,616,002, teachers 23,889; secondary 942, pupils 310,185; technical 1,307, pupils 121,137; teachers' training colleges 53, students 16,145; institutions of higher education: faculties 32, students 43,625; high schools 17, students 2,798. Illiteracy (1931): 45.2%.

Finance and Banking.—Budget (1949 est.) balanced at 161,953,000,000 dinars; (1950 est.) balanced at 173,746,000,000 dinars. Monetary unit: dinar with an official exchange rate of 2 cents U.S. (Dec. 1949).

Foreign Trade.—Imports: (1947) 14,435,000,000 dinars. Exports: (1947) 8,637,000,000 dinars.

Transport and Communications.—Roads (1940): 20,906 mi. Licensed motor vehicles (Dec. 1948): cars 10,600, commercial vehicles 4,200. Railways (1940): 4,319 mi. Shipping (July 1948): merchant vessels 103, total tonnage 202,615. Telephones (1948): subscribers 66,495. Radio sets licensed (1947) 220,256.

Agriculture.—Main crops (metric tons): maize (1947) 4,000,000; wheat (1946) 1,803,000; barley (1946) 194,000; oats (1946) 154,000; rye (1946) 170,000; potatoes (1947) 800,000; sugar, raw value (1948) 95,000; cotton, ginned (1948) 3,000; hemp (1947) 34,000; flax (1947) 3,000; tobacco (1945) 13,000. Livestock (Dec. 1946): cattle 2,493,000; sheep and goats 6,355,000; pigs 2,763,000; horses used in agriculture 613,000; chickens 16,000,000.

Industry.—Industrial establishments (1939) 3,254. Coal (metric tons, 1940) 421,000; lignite 6,888,000. Raw materials (metric tons): copper ore (1947) 30,000; lead (1947) 50,000; bauxite (1944) 150,000; zinc ore (1947) 30,000.

Yukawa, Hideki (1907–), Japanese physicist and Nobel prize winner, was born in Tokyo and educated at Kyoto. He became professor of physics at Kyoto university in 1939, and in 1948 went to the U.S. at the invitation of J. Robert Oppenheimer to work at the Institute for Advanced Study at Princeton, N.J. He was the first Japanese scientist to be so invited to the U.S. after World War II. During the 1949–50 academic year he was visiting professor of physics at Columbia university, and it was there he received word of his award of the 1949 Nobel prize for physics. This was given for his theoretical reasoning that anticipated the discovery of the meson, which Yukawa described as a particle "in between matter and energy."

Yukon Territory. Yukon, the most northwesterly political division of Canada, created in 1898, is bounded by Alaska, British Columbia, the Northwest Territories and the Arctic ocean. Area: 207,076 sq.mi.; pop.: (1941) 4,914, (1949 est.) 8,641 (including 1,447 Indians and 53 Eskimos). The capital is Dawson; the territory is administered by a three-member territorial legislative council, has one federal member of parliament and is controlled federally by a commissioner and an administrator.

History.—In the 1948–49 fiscal year the federal government collected $1,655,463 revenue in the Yukon and expended $3,117,335 for administration and development. To encourage tourism and protect game, the post of superintendent of game and publicity was created and filled. Effective April 1, 1949, a new old-age and blind pensions arrangement was made between the territory and the federal government, by which the latter contributed 75% of the basic monthly pension of $40 and the territory paid the rest. The federal department of health and welfare sent a mobile X-ray unit up the Alaska highway to provide tuberculosis examination for all white and Indian settlers; to reach nonhighway settlements the unit travelled by boat and air. A survey of the hydroelectric potentials of the Mayo Landing district was begun.

Transportation.—River traffic flourished during 1949, with six stern wheel steamers in operation. In 1948 there were 19,282 tons of freight moved by river, including ore, and 7,297 passengers. The rich gold-mining area of Atlin, B.C., formerly accessible only by air in summer and tractor train in winter, was connected with the Alaska highway in 1949 by construction of a $450,000 58-mi. all-weather road to Jake's Corner (Mile 867 on the Alaska route). Since the new road was 31.66 mi. in British Columbia and 26.35 mi. in the Yukon, it was jointly sponsored by the British Columbia and the federal governments, while construction was carried out by the royal Canadian engineers of the Northwest Highway system of the Canadian army. To connect the Alaska highway with Dawson and Mayo Landing, the federal government undertook conversion of the Whitehorse-Mayo Landing-Dawson trail into an all-weather road, and in 1949 the Mayo Landing-Carmacks sector was practically completed. Air transportation was stepped up slightly in 1949, and Canadian Pacific Air Lines connected Yukon points daily with Vancouver and Edmonton, and operated a twice-weekly shuttle from Whitehorse to Mayo Landing and Dawson. In addition to the military airfields and flight strips of the Northwest Staging route, 11 other regular and emergency airfields were kept open.

Furs.—Production took a decided jump from the 58,777 pelts caught in 1947 to 131,227 in 1948 (high for the 1943–47 period being 107,252 pelts). However, squirrels accounted for 94,743 pelts; muskrat was next high with 30,686; others included marten 1,433, weasel 1,377, lynx 1,190, mink 812, fox 720. The total value of the 1948 catch was $230,117.

Minerals.—In 1949 the Tantalus Butte coal deposits were worked, but production was restricted because of transport problems. Surveys were progressing for completion of a road to join the mines with Mayo Landing. During 1948 mineral production included 60,614 fine oz. of gold, 1,718,618 oz. of silver, and 4,598,665 lb. of lead. The total value was $4,265,910, compared with $2,095,508 for 1947. (C. Cy.)

Zanzibar: *see* BRITISH EAST AFRICA.

Zinc. World production of zinc advanced by 6% in 1948, to a level above that of 1939. The outputs of the important producing countries and the estimated world totals during the past several years are shown in Table I.

Smelters in most of the European countries were up to or past their prewar outputs, and the deficiencies in Germany and Poland were more than offset by increases elsewhere.

Table I.—*World Production of Zinc*

(In thousands of short tons)

	1939	1943	1944	1945	1946	1947	1948
Australia	79.8	84.8	88.2	93.8	85.4	77.7	91.6
Belgium	205.1	30.6	9.6	12.9	95.0	146.7	169.5
Canada	175.6	206.5	168.5	183.3	185.7	172.9	196.5
France	67.3	22.6	9.7	9.3	33.5	50.7	61.2
Germany	254.6	343.9	286.2	?	31.3	22.8	45.6
Great Britain	58.3	77.5	80.7	69.5	73.1	76.4	80.6
Italy	39.0	27.8	—	1.7	16.8	28.6	29.5
Japan	56.5	67.1	69.0	20.4	12.4	16.4	23.4
Mexico	39.0	60.0	54.3	54.0	46.3	62.5	53.2
Netherlands	22.4	5.0	2.3	—	2.2	10.5	15.0
Northern Rhodesia	14.2	15.0	16.2	17.1	19.2	23.7	24.8
Norway	50.6	16.9	13.0	10.2	33.3	38.1	46.3
Poland	120.0	?	?	40.1	62.4	79.1	96.0
Spain	14.8	21.2	19.9	19.1	19.4	21.8	23.4
United States	507.2	942.3	869.3	764.6	772.4	802.5	787.8
Total	1,820	2,030	1,790	1,400	1,550	1,760	1,865

United States.—In 1948 mine output, smelter output and imports all fell short of the 1947 level, cutting the supply at the same time consumption was increasing. The salient features of the zinc industry in the United States are shown in Table II, as reported by the U.S. bureau of mines.

Table II.—*Data of Zinc Industry in the U.S.*

(In thousands of short tons)

	1939	1943	1944	1945	1946	1947	1948
Mine production	583.8	744.2	718.6	614.4	574.8	637.6	630.0
Smelter production	507.2	942.3	869.3	764.6	772.4	802.5	787.8
Domestic ores	491.1	594.2	574.5	467.1	459.2	510.1	538.0
Foreign ores	16.2	348.1	294.8	297.5	269.1	292.4	249.8
Imports	67.0	593.2	486.3	478.8	376.8	370.3	357.5
In ore	36.1	537.0	422.7	381.7	272.1	298.0	264.2
Metal	30.9	56.2	63.6	97.1	104.7	72.4	93.3
Secondary recovery	189.6	368.5	345.5	360.4	300.7	310.8	324.6
Stocks	?	261.0	298.5	328.6	269.2	149.3	117.4
Producers'	86.3	170.6	233.7	256.2	176.2	68.6	20.8
Consumers'	?	90.4	64.8	72.4	93.0	80.8	96.6
Consumption	626.0	816.8	888.6	852.3	801.2	786.4	817.7

There was another small decline in mine output in 1949, but smelter output increased slightly, assisted by larger imports of ore.

Canada.—The recoverable zinc content of Canadian ores rose from 207,863 tons in 1947 to 234,164 tons in 1948, of which 196,575 tons was produced locally as refined zinc and 37,589 tons was exported in ores and concentrates. The improved production rate was continued in 1949, with a total of 212,544 tons in the first nine months, of which 156,706 tons was refined zinc output. After midyear 1949 the exports of zinc in ore and concentrates more than doubled over the preceding rate, and reached a total of 72,365 tons through September. (G. A. Ro.)

Zonta International: *see* SOCIETIES AND ASSOCIATIONS.

Zoology. The need to counteract the effects of increasing specialization was met, at least in part, by the publication in 1949 of the first volume of an annual *Survey of Bio-*

WILD ELEPHANT (centre) newly captured in the African bush. The young captive, shown between two monitor elephants, was to be trained to work on a plantation or sold to a zoo. The annual elephant hunt undertaken by the Belgian Congo's elephant domestication station was illustrated in photographs at the Heads and Horns museum of the Bronx zoo, New York city, in 1949

logical Progress under the editorship of G. S. Avery, Jr. The International Society for Cell Biology announced a new journal, *Experimental Cell Research,* the first issue of which (supplement I) contained the Proceedings of the 6th International Congress of Experimental Cytology.

The American Society of Zoologists met jointly with the American Association for the Advancement of Science in New York, N.Y., Dec. 28–30, 1949. There were 270 papers scheduled for this meeting compared with 204 in 1948. The fact that 108 (40%) of these were concerned with cellular or general physiology should not be taken as an indication of a trend, for zoological interests were appealed to by other societies which met simultaneously—societies devoted to specialized interests in parasitology, systematic zoology, microscopy, ecology, evolution, and genetics.

Research and Publication.—No estimate of the total number of publications was available, but it may be said that research papers and books of zoological interest numbered several thousand. Only a small sample of these can be mentioned here.

Embryology and Cytology.—By mating female salamanders (axolotls) which had either one or two extra sets of chromosomes (that is, were either triploid or tetraploid) with normal males, R. R. Humphrey and G. Fankhauser succeeded in obtaining three generations of animals with extra chromosome sets. The sterility of many such females and of all such males so far obtained made it appear unlikely that a similar process would effect the formation of new species in nature.

Paul Weiss (chapter VII, *The Chemistry and Physiology of Growth,* edited by A. K. Parpart), in his review of differential growth, called for a reorientation of analytical embryology toward "greater precision, objectivity, and consistency in the description and interpretation of phenomena . . ." and carried out his mandate by interpreting growth and differentiation in molecular terms. He pointed out that growth was an ill-defined term connoting diverse processes and that "There can be no research on growth as such. We can only study growing objects."

Behaviour.—The unresolved problem of homing in birds was further investigated by D. R. Griffin and R. J. Hock who used an aeroplane to follow the flights of gannets released up to 213 mi. inland from their nesting sites on Bonaventure Island. Thirteen of the 22 released returned. The birds took off from the release points in apparent random orientation. The authors suggested that they first explored, perhaps by flying in ever widening spirals, till they reached the coast. They then may have utilized familiar landmarks to guide them home.

W. H. Thorpe worked with K. von Frisch at Brunnwinkl and confirmed the latter's remarkable studies on communication in the honey bee. Briefly, when a worker bee discovered pollen or nectar within 50 to 100 m. of the hive she executed a "round dance" on the comb; fellow workers became "excited" and left the hive to begin a random search for food nearby. If, however, food was 100 m. or more from the hive, the returning worker performed a "waggle dance" on the vertical surface of the comb. The worker followed a broad figure eight and performed waggles when crossing the connecting bar of the figure. The other bees followed in contact with the dancer and then left the hive and flew directly (with an error in direction of not more than 3°) to the food. It appeared that the direction of the waggle run gave a clue to the direction of the food in relation to the direction of the sun. Thus a vertical run meant that the food was in a direct line in the direction of the sun; a run 30° to the left of the vertical indicated that the food was at the same angle to the left of a line connecting the hive and the sun; a vertical run downward indicated that the food was directly opposite to the sun; and so on. The rate at the which waggle dances were performed was inversely related to the distance of the food. Thus, waggle runs completed at the rate of 40 per minute indicated food at 100 m., 68 per minute food at 1,500 m. and so on. The "informed" workers responded by flying to within 100 m. of the food before beginning a search. Thorpe compared the whole performance with human map making and map reading. Presumably, the bees oriented themselves by gravitational cues which they were then able to relate to the sun's direction.

Ecology and Natural History.—Of general ecological interest were Charles Elton's essay on animal community patterns and the monumental body of carefully analyzed data brought together by W. C. Allee, A. E. Emerson, O. Park, T. Park, and K. P. Schmidt in their *Animal Ecology*, a book that promised to be a landmark in the field. G. E. MacGinitie and Nettie MacGinitie published the results of years of field and laboratory study in their *Natural History of Marine Animals.*

The publication of studies based on the material collected during the Danish world oceanographical expedition of 1928–30 was continued by Grace E. Pickford's account of the external anatomy of an archaic cephalopod (a group including the octopus and the squid), specimens of which were taken at depths of 300 to 3,000 m. in tropical and subtropical waters of the Atlantic, Pacific, and Indian oceans. These cephalopods were more closely similar to certain Mesozoic fossils than to members of any living orders previously described.

Although whales had, in late years, been thought to be closely akin to the Carnivora, A. Boyden and D. Gemeroy, using precipitin tests to compare the blood sera of whales and members of 14 mammalian orders, concluded that they were most nearly related to the even-toed ungulates (*Artiodactyla*).

G. R. Seaman reported that a ciliated unicellular animal, *Tetrahymena geleii,* when adapted to growth in a sucrose (sugar) solution, appeared to utilize atmospheric nitrogen. This aroused much interest for it had hitherto been thought that such a capacity was confined to certain bacteria and blue-green algae. Confirmation would be necessary before this result would be generally accepted. (*See* also ENDOCRINOLOGY; ENTOMOLOGY; GENETICS; MARINE BIOLOGY; PALEONTOLOGY.)

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(G. P. DuS.)

Zoological Parks.—*Africa.*—Since the capture and exportation of most rare and even scarce mammals and birds had been placed under government control in British, French and Portuguese colonies, the various game departments had built small zoos in which the animals were accumulated and acclimatized before being sent abroad. The instigation of this strict and responsible management was generally approved.

Asia.—Although extensive collections had been exported from Asia to the rest of the world, the state and private collections, especially the notable ones of India, were being disposed of.

Australia.—In late years the several older zoos, and the more recently established park-sanctuaries, had made special effort to secure a great variety of native animals; they maintained these with remarkable success in spite of the special requirements and many problems which confronted them. Platypuses were shown in most collections as were the lyrebird and koala, this "difficult" species having been captive-bred and raised at Lone Pine Park, Queensland. During 1949 the two largest and most diverse collections of New Guinea animals were brought by E. J. Hallstrom and his collectors to Sydney; the collections included more than 25 kinds of birds of paradise.

Europe.—During the summer of 1949 the first incidence of plague disease in mammals within recent years was reported to have occurred in the Rome zoo. Animals imported from Italian Somaliland were rinderpest carriers; all ruminant animals in the collection were destroyed and the disease was stamped out. H. Hediger, Zoological garden, Basle, Switz., and G. S. Cansdale, London zoo, were elected president and secretary of the International Union of Directors of Zoological Gardens.

United States.—The roster of the American Association of Zoological Parks and Aquariums indicated that as of the close of 1949 there were 149 public collections maintained in the United States and Canada. At the annual meeting of this association, Mrs. Belle Benchley, executive secretary of the Zoological Society of San Diego, Calif., was elected president. Extensive building programs and the rehabilitation of old structures and landscaping effects in most zoological parks were reinstated; these included the building of a house for great apes in New York city, house and barless enclosures for the large and small cats of the world in Philadelphia, Pa., and a bird house in Cleveland, O., the latter of such capacity and with such facilities that birds of all orders and environments might be shown in it.

FILMS OF 1949.—*Ants; The Zoo* (Encyclopædia Britannica Films Inc.); *Life of the Harvester Ant—Part I* (Tompkins Films); *Wonders in Your Own Back Yard* (Churchill-Wexler Film Productions); *Zoology Series—The Crayfish* (United World Films, Inc.). (Ro. B.)

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